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SOME RESULTS OF TRANSFUSION OF BLOOD TO RECIPIENTS WITH "COLD" AGGLUTININS

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Landsteiner and Witt (1926), and later Landsteiner and Levine (1926, 1929), drew attention to the existence of anti-A_1 agglutinins in the sera of some bloods of subgroups A_2 and A_2B. Landsteiner and Levine (1926) also noted that the sera of some bloods of subgroups A_1 and A_1B contained an agglutinin which reacted with bloods of subgroup A_2. This latter agglutinin was designated as α_2 and later by Thomsen (1932) as anti-O. As well as these specific cold agglutinins, Landsteiner and Levine (1926) described non-specific cold agglutinins, or auto-agglutinins, existing in the sera of bloods of all groups. All these agglutinins were generally weak, and reacted best in the cold or at low room temperature.

Such agglutinins under certain circumstances may become active at body temperature (37° C.). The instances described in the literature are as follows :

Anti-A_1.—Wiener (1941) and Young (1945) have each described a case of acquired haemolytic anaemia in which anti-A_1 agglutinins active at 37° C. developed after transfusion and were therefore presumed to be immune agglutinins. Race *et al.* (1943) also noted an immune anti-A_1 agglutinin active at 37° C. in a woman post partum. Young (1945) described in addition a case—a man of group A_2—who received a massive transfusion of group O blood and plasma. Some days later his serum was found to contain an anti-A_1 agglutinin active at 37° C., presumably derived passively from the natural anti-A_1 agglutinin of the plasma and the group O blood transfused.

Anti-O.—Davidsohn (1942) has reported a case in which such agglutinins active at 37° C. developed in the serum of a person of subgroup A_1 after repeated transfusions.

Auto-agglutinins.—Reisner and Kalkstein (1942) described auto-agglutinins active at 37° C. in a case of acquired haemolytic anaemia. Wiener (1942) described another such auto-agglutinin in a child with *Staph. aureus* septicaemia with anaemia, presumably haemolytic. Baar (1945a, 1945b) has noted three cases with acute or subacute liver necrosis and haemolytic anaemia whose serum contained auto-agglutinins active at 37° C. He describes these agglutinins as anti-O, but as they acted in each case also on the subject's own red cells they are, in the present state of knowledge of red cell antigens, probably better termed auto-agglutinins.

Apart from Young's case, in which the anti-A_1 agglutinin was derived presumably from the transfused group O blood and plasma, all these cold agglutinins active at body temperature can be explained as being the result of a process of immunization or auto-immunization, and naturally occurring atypical cold agglutinins active at 37° C. do not seem to have been described.

The possibility that cold agglutinins played a part in transfusion reactions was in the past a cause of great controversy (see Kilduffe and DeBakey, 1942). In the last five years it has been shown that the cause of most of the severe and hitherto unexplained haemolytic transfusion reactions is the Rh group of antibodies, which are usually warm agglutinins. The problem, therefore, of the cold agglutinins was left largely unsolved, though no well-documented case of a haemolytic transfusion reaction due to a cold agglutinin has been recorded (Wiener *et al.*, 1941). In the present paper some observations are presented which confirm the view that atypical cold agglutinins inactive at 37° C. do not cause destruction of transfused erythrocytes. The observations also show that such agglutinins may undergo an immune response following the transfusion of blood containing the homologous agglutinogens and become active at 37° C.; they then may cause blood destruction, and must be taken into account in the selection of blood donors.

Case I

This patient, who had a mild hypochromic anaemia as a result of menorrhagia, was of group A_2M. Her serum contained an anti-A_1 agglutinin with a titre of 16 at 5° C., 2 at 18° C., and 0 at 37° C. After hysterectomy she was transfused with 380 ml. of A_1N blood, carefully warmed, and with 1,000 ml. of group OM blood which was not warmed. A slight increase of titre of the anti-A_1 agglutinin was noted on the eleventh day after transfusion; the titre was then 64 at 5° C. and 4 at 18° C., but the agglutinin still could not be detected at 37° C. Both the group O and the group A_1 cells survived normally; about 25% of the cells of each group were present 80 days after transfusion.

Comment.—A patient with anaemia from haemorrhage who had atypical "cold" anti-A_1 agglutinins in the serum was transfused with A_1 blood. The A_1 blood survived normally. There was a slight increase of titre of the anti-A_1 agglutinins; the thermal amplitude did not reach 37° C.

Case II

A man aged 58 had over a period of months a series of haemorrhages of increasing severity from a gastric ulcer. He was of group A_1 Rh-positive, and his serum contained an anti-A_1 agglutinin whose titre was 4 at room temperature and 0 at 37° C. He was first transfused with group O blood and then, after a biological test (Wiener *et al.*, 1942) had given a negative result, with 430 ml. of A_1 Rh-negative blood, refrigerator-cold, in half an hour. There was neither clinical reaction nor rise in plasma bilirubin. An attempt to follow the survival of this blood was frustrated by repeated haemorrhages. Within five days, although the anti-A_1 titre had not altered, no A_1 blood could be detected in his circulation. 500 ml. of group A concentrated red cells was given, also without reaction. For ten days A_1 cells could be detected in his blood, but repeated haemorrhages were occurring. Multiple group O and two further group A transfusions were given without reaction, and A_1 cells were again detectable in his blood. Three weeks after the last group A transfusion the anti-A_1 titre had risen to 32 at room temperature, but was still 0 at 37° C. The haemorrhage ceased and a successful partial gastrectomy was performed.

Comment.—This case of anaemia from haemorrhage had an atypical "cold" anti-A_1 agglutinin in the serum. Four transfusions of group A_1 blood were given without incident. There was an increase of the anti-A_1 agglutinin titre, but a thermal amplitude to 37° C. was not attained. It was not possible to follow the survival of the A_1 blood quantitatively because of repeated massive haemorrhages.

Case III

A woman aged 44, group AB, with menorrhagia due to fibroids, was found to have an auto-agglutinin active at room temperature. A transfusion of 500 ml. of a group B concentrated red cell suspension

was given in 50 minutes. The temperature of the cell suspension was 5–10° C. At the cross-matching test before transfusion the donor's erythrocytes were completely agglutinated by the recipient's serum at room temperature, though not at all at 37° C. There was no rise in the recipient's serum bilirubin immediately after or five hours after transfusion, and 24 hours after transfusion a differential agglutination test carried out on a blood sample from the recipient showed the presence of the expected number of donor's erythrocytes.

Comment.—A case of anaemia from haemorrhage with atypical "cold" auto-agglutinins in the serum was transfused with blood as cold as possible. No haemolysis could be detected, and the transfused blood survived normally.

Case IV

This woman, aged 22, was first seen by us in April, 1942, when she had extensive tuberculosis and a haemolytic anaemia. She complained of cough, pains in the chest, and lassitude. On examination she was pale and slightly jaundiced. There were signs of bilateral pulmonary tuberculosis and enlarged glands in both sides of the neck (with scars of previous excisions) and in both axillae. The spleen was just palpable. In hospital she had a remittent fever to 102° F. (38.9° C.) and a pulse rate of 90 to 120. A blood count on March 17, 1942, had shown: red cells, 1.2 millions per c.mm.; haemoglobin, 26% (Haldane); leucocytes, 4,600, of which 81% were neutrophil polymorphs. Marked anisocytosis and polychromasia of the red cells had been reported.

At the end of March she had been given two transfusions each of 500 ml. of group O concentrated red cells without any appreciable rise in haemoglobin.

On April 23, when seen by us, her haemoglobin was 34% and the plasma bilirubin 2 mg. per 100 ml. Her red cells showed marked auto-agglutination; her blood group was A (later diagnosed as subgroup A_2). A course of transfusions, each of 1,000 ml. of concentrated red cells, was given—on April 24 group O, on April 28 group A, and on May 1 group A. Of the eight group A donors who contributed, seven were traced and found to belong to subgroup A_1. On each occasion cross-matching tests at 37° C. had shown the donor cells to be compatible, and there was no reaction to any of the transfusions.

On May 13, as it was desired to give the patient a further transfusion, her serum was cross-matched with several group A bloods at 37° C. Only one of these was compatible, the others being strongly agglutinated. This compatible blood and the patient herself were then tested, and were both found to belong to subgroup A_2. On account of this it was suspected that she possessed an atypical anti-A_1 iso-agglutinin. Her serum was then put up with a larger series of group A bloods at 37° C. The results confirmed that the iso-agglutinin was specific for A_1 cells.

Fig. 1, showing the anti-A_1 iso-agglutinin titre of the patient's serum at 37° C., demonstrates that there was an immune response to the injection of the group A_1 blood. The magnitude of this immune response makes it seem most probable that an anti-A_1 iso-agglutinin was present before transfusion, active at a temperature below 37° C. The graph gives no indication of an immediate immune response, but, had it been possible to titrate the anti-A_1 iso-agglutinin at lower temperatures before and during the first five days after transfusion, no doubt an increase in titre and thermal amplitude would have been detected.

It is interesting to correlate these observations with the clinical condition of the patient and the haematological findings. On May 8, one week after the last transfusion, she became deeply jaundiced and ill. The liver enlarged down to the umbilicus; the urine contained bile pigment, but the stools appeared normal. The haemoglobin fell from 70% on May 2 to 17% on May 14. On this day there were no demonstrable A_1 cells in her blood, although there were still 375,000 per c.mm. (18% of the original count) group O cells from the first transfusion. The clinical features of sudden increase in jaundice and malaise suggested either a spontaneous haemolytic crisis or a delayed blood-incompatibility reaction. The presence of bile in the urine, which is not uncommon after incompatibility reactions, favoured the latter diagnosis; the complete disappearance of A_1 cells but not of the previously transfused O cells, together with the serological findings, makes the diagnosis practically certain. The patient was at this point again transfused without reaction with 500 ml. of group A_2 blood, 1,500 ml. of group O blood, and 500 ml. of group O concentrated red cells, which raised her haemoglobin to 70% the following day. By this time the jaundice had disappeared. Within the next two weeks the haemoglobin fell steadily to 38%, and then appeared to become stable at a level of 38 to 44%.

Comment.—This case of acquired haemolytic anaemia had in the serum auto-agglutinins and an atypical anti-A_1 agglutinin. When A_1 blood was transfused there was a marked immune response of the anti-A_1 agglutinin. One week after the last group A_1 transfusion, when the thermal amplitude of the anti-A_1 agglutinin reached 37° C., signs of delayed blood-transfusion-incompatibility reaction appeared with massive haemolysis and elimination of the blood.

Case V

This woman, aged 37, with a full-term pregnancy, had a Caesarean section on July 21, 1942, after the rupture of the membranes. Three days later the temperature rose to 103° F. (39.4° C.). Subsequently *Staph. aureus* was grown from the cervix and *Staph. aureus* and haemolytic streptococci from the abdominal wound. Massive sulphonamide therapy was instituted. As the patient was of group AB, on July 26 1,000 ml. of group AB citrated blood and on July 29 500 ml. of group O blood were given. On July 31 the haemoglobin was 54%, and the leucocytes 12,500 per c.mm., of which 85% were neutrophil polymorphs. The erythrocytes showed slight anisocytosis and poikilocytosis and moderate polychromasia. Three normoblasts and two primary erythroblasts were seen in counting 200 white cells. Fifty-eight grammes of sulphathiazole and 19½ g. of sulphapyridine had been given in the preceding seven days. On Aug. 2 a further 1,500 ml. of citrated group AB blood was given, raising the haemoglobin to 75%. The donors of the last transfusion and the patient were found subsequently to belong to subgroup A_2B. The previous donors could not be traced. By Aug. 17 the haemoglobin had fallen to 38%. A further transfusion was contemplated, but homologous-group blood (AB) was agglutinated on cross-matching at room temperature. Moderate auto-agglutination was also noted (titre 2 at room temperature). Examination of her serum revealed an atypical anti-A_1 iso-agglutinin—titre 32 at room temperature and 8 at 37° C. Two transfusions of group B citrated blood and group B concentrated red cell suspension, both compatible on cross-matching, were given on Aug. 23 and 25. The haemoglobin rose to 62%. A further 62 g. of sulphapyridine and 7 g. of sulphadiazine had by this time been given.

Blood cultures, which had previously been negative, grew *Staph. aureus* on three occasions, the last on Sept. 15. Fifty-four grammes of sulphathiazole were given over four days during this time. She was first seen by us at this point. Transfusions of group B concentrated red cell suspension, 1,000 ml. and 750 ml., were given on Sept. 21 and Oct. 15 respectively, and the haemoglobin rose to 94%. Metastatic abscesses appeared, and were not finally cleared up until January, 1943.

The titre of the anti-A_1 iso-agglutinin was followed at intervals (Fig. 2). On Oct. 11, 77 days after the first transfusion, the thermal amplitude had fallen below 37° C.

On Dec. 2 a biological test (Wiener *et al.*, 1942) with 30 ml. of fresh group A_1N blood was negative. Therefore a transfusion of 450 ml. of A_1N citrated blood plus 200 ml. of A_1N concentrated red cell suspension and 300 ml. of group O MN concentrated red cell suspension was given. It is suggestive that, at the forty-third day after transfusion, whereas 39.5% of the group O cells were still in the circulation, there were only 9% of the group A_1 cells. By the fifty-sixth day all the A_1 erythrocytes had been eliminated, although 29% of the group O were still surviving. At this point the anti-A_1 iso-agglutinin was again active at 37° C., with a titre of 1.

A final course of sulphonamide therapy, 67 g. in nine days, was given, starting Jan. 5, 1943, because of a cross-infection of an abscess cavity with haemolytic streptococci. On Jan. 20, the haemoglobin having fallen to 40%, a transfusion of 500 ml. of group B concentrated red cell suspension was given. On Jan. 29 a biological test with 65 ml. of group A_1N fresh citrated blood gave a positive reaction—the serum bilirubin being 0.24 mg. per 100 ml. before the test and 0.8 mg. one hour afterwards.

Comment.—This was a case of haemolytic anaemia in which, as a result presumably of an A_1B blood transfusion, an atypical anti-A_1 agglutinin reached a thermal amplitude of 37° C. After the thermal amplitude had subsequently fallen below 37° C. a blood transfusion with A_1 blood was given, being well tolerated. Two months later the thermal amplitude again reached 37° C. and the A_1 blood had been eliminated, and a biological test showed that more A_1 blood was incompatible.

Case VI

A woman aged 32, group A_1B Rh-negative, had had a macrocytic anaemia refractory to treatment since her only pregnancy five years previously. She also had neurological symptoms and signs not conforming to the classical syndrome of subacute combined degeneration of the cord or of disseminated sclerosis. For one year she had had attacks of jaundice associated with the passage of urine "the colour of liver extract." Nine months previously she had been in hospital and was given three blood transfusions—the first two of group O, the third of group AB—all of which were followed by the development of jaundice and the passage of bloody urine.

On examination she was slightly icteric and markedly pale; the liver and spleen were not palpable. There were pallor of the optic disks, fine nystagmus on looking to the left, slight wasting of the

hand muscles, muscular weakness more pronounced in the upper than in the lower limbs, sluggish tendon-jerks in the arms, absent ankle-jerks and sluggish knee-jerks, and a positive Babinski response. There were no sensory signs. She had an anaemia of the haemolytic type—plasma bilirubin 3 mg. per 100 ml., reticulocytosis up to 30%, with grossly excessive urobilinogen in the urine. The erythrocyte fragility was not increased. A transfusion of group O Rh-negative blood was followed by haemoglobinuria for three days.

At this stage we were able to examine her blood. Her serum contained an agglutinin, or mixture of agglutinins, which agglutinated at room temperature the red cells of 130 random bloods but not her own red cells. Three only of the bloods were not agglutinated at 37°C. These were of groups A_1N Rh_1rh, A_1N rhrh, and A_1BMN rhrh respectively. Three others were but weakly agglutinated at 37°C., and were of groups A_1M Rh_1rh, A_1N Rh_1rh, and A_1MN rhrh. With the quantities of serum available differential absorption experiments showed no clear-cut mixture of agglutinins. A bottle of concentrated red cells was made with the two A_1 bloods not agglutinated at 37°C., and approximately 120 ml. was given slowly over a period of one hour without symptoms. A sample was then taken, which showed gross haemoglobinaemia and no demonstrable A_1 cells by differential agglutination with anti-B serum. The transfusion was therefore stopped. A transfusion some days later with 400 ml. of reconstituted dried serum was uneventful and gave rise to no haemoglobinaemia. The antibody or antibodies responsible for the haemolysis of the transfused blood could not have been anti-Rh agglutinins or "blocking" antibodies, as both Rh-positive and Rh-negative blood were equally eliminated. The properties of the agglutinin resemble anti-O—not the weak anti-O specific for group O and group A_2 blood as originally described, but the strong anti-O as produced by Hirzfeld and Amzel (1940) in the goat by immunization with Shiga antigen which agglutinated bloods of all groups, the group O bloods most powerfully and certain of the groups A_1 and A_1B bloods only weakly. It had the properties of a cold agglutinin in being stronger at room temperature than at 37°C., but the difference in titre was not great—average titre at room temperature 8 and at 37°C. 4. It is notable that bloods apparently compatible by careful cross-matching tests at 37°C. were incompatible *in vivo*.

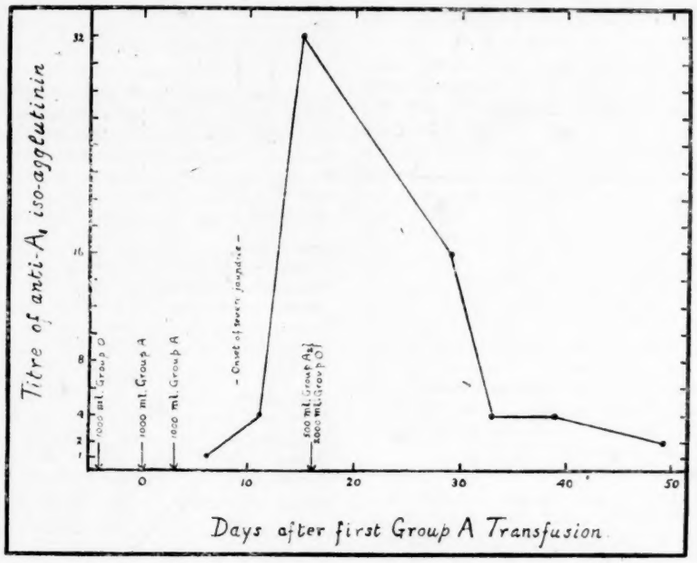

FIG. 1.—Case IV. Immune response of anti-A_1 iso-agglutinin (titrations at 37° C.).

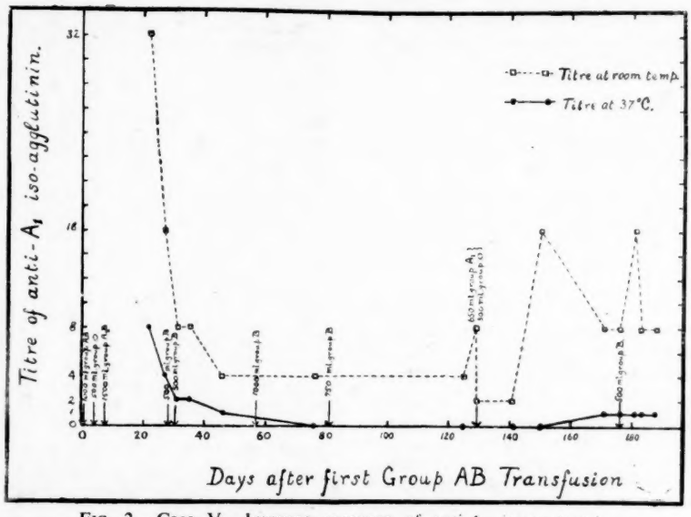

FIG. 2.—Case V. Immune response of anti-A_1 iso-agglutinin (titrations at room temperature and 37° C.).

Comment.—This case of acquired haemolytic anaemia had in the serum an agglutinin which *in vitro* reacted at room temperature with all red cells except the patient's own and at 37° C. with the great majority of bloods; *in vivo* even bloods without reaction at 37° C. were haemolysed. This may have been an anti-O agglutinin.

Discussion

Cases I, II, and III had in their serum natural cold agglutinins. In Cases I and II the agglutinin was of the anti-A_1 variety; in Case III it was an auto-agglutinin. In none of these cases transfused with blood, the red cells of which were agglutinated at room temperature but not at 37° C., was there any suggestion of a haemolytic transfusion reaction, even though, as in Cases II and III, no attempt was made to warm the blood to body temperature; in fact, on two occasions the blood was purposely given at as low a temperature as possible. Moreover, where estimation of the survival of the transfused red cells was possible, this showed that the transfused blood survived normally. As a result of the transfusions in Cases I and II there was a slight increase in titre of the cold agglutinin. It is possible that if the antigenic stimulus had been applied often enough the antibody response might have been such that the agglutinin would have increased in thermal amplitude to body temperature. This apparently was so in Davidsohn's (1942) case, in which an anti-O agglutinin became active at 37° C. This was a case of repeated haemorrhage treated with multiple transfusions. It is probable that certain individuals are more susceptible to the blood group antigens than others; this is certainly so with Rh-negative individuals, as determined by their antibody response to repeated pregnancy with Rh-positive foetuses or to repeated transfusion with Rh-positive blood.

Nos. IV, V, and VI, in whose sera the atypical antibodies were active at 37° C., were all cases of haemolytic anaemia of the acquired variety—in Cases IV and VI of uncertain aetiology, and in Case V probably as a result of septicaemia. The cases of Wiener (1941), Young (1945), Reisner and Kalkstein (1942), Wiener (1942), and Baar (1945a, 1945b), noted in the introduction, also appeared to be instances of acquired haemolytic anaemia. It has long been known that cold auto-agglutinins are to be found commonly in the sera of such cases. It would appear that these agglutinins may reach a thermal amplitude of 37° C. as a result of auto-immunization, aided perhaps by transfusions of homologous blood, or that they are associated with the autohaemolysin responsible for the haemolytic process (Dameshek and Schwartz, 1940), as iso-agglutinins are associated with isohaemolysins. The mechanism which stimulates the formation

of these non-specific cold agglutinins probably also stimulates, in the case of the appropriate blood group, the specific atypical cold agglutinins. This may account for the anti-A_1 agglutinins active at 37° C. in Cases IV and V and in the cases of Wiener (1941) and Young (1945).

In the selection of donors for cases of acquired haemolytic anaemia, and for puerperal women (especially the mothers of infants with erythroblastosis foetalis, who are known to be capable of responding to blood group antigens) of groups A and AB, one should therefore take cognizance of the subgroup of donor and recipient as well as of the major group and the Rh group.

The fact that it is possible to obtain by immunization, either by transfusion or by pregnancy, agglutinins specific and active at 37° C. for A_1 blood in recipients of subgroups A_2 and A_2B presents, as pointed out by Wiener (1941), conclusive evidence in support of the theory that there is a qualitative difference between the agglutinogens A_1 and A_2. Hitherto, however, the activity of these atypical agglutinins at 37° C. had been determined by tests *in vitro* only. Thus both Wiener and Young observed their agglutinins during cross-matching tests with A_1 blood, so that trials *in vivo* were not attempted. In Case IV, above, the specific anti-A_1 agglutinin was detected only after transfusion, and a delayed incompatible transfusion resulted, thus proving the specificity and activity *in vivo* of the anti-A_1 agglutinin. In Case V, above, the biological test of Wiener *et al.* also showed that the anti-A_1 agglutinin was active *in vivo*. Case VI illustrates that tests *in vivo* are more reliable than the routine careful cross-matching tests *in vitro*. The biological test of Wiener *et al.* would have demonstrated haemoglobinaemia even earlier than it was detected in this case.

Summary

Six individuals whose sera contained cold agglutinins were transfused with blood.

In the first three cases, in which the atypical antibody present was a natural agglutinin active only below body temperature and in which the anaemia was due to haemorrhage, there was no clinical reaction even though the blood was transfused at refrigerator temperature; moreover, the transfused blood survived normally.

In the last three cases, in which the atypical antibody was an immune antibody active at 37° C. and the anaemia was of the acquired haemolytic type, incompatibility and rapid destruction of the transfused blood were demonstrated.

Cases of acquired haemolytic anaemia, and other cases in which immunization either by pregnancy or by repeated transfusions has occurred, need special consideration when being transfused. This applies not only to the Rh group of antigens but also to the subgroups of the A antigen.

Acute haemolysis of A_1 donor blood occurred in recipients of subgroups A_2 or A_2B, whose sera contained anti-A_1 agglutinins active at 37° C. This provides further and more conclusive evidence of a qualitative antigenic difference between the bloods of subgroups A_1 and A_2.

We should like to thank the following for permitting us to investigate cases under their care: Dr. Horace Evans, Mr. E. C. B. Butler, Mr. A. Perry, Mr. J. V. O'Sullivan, Mr. A. York Mason, Dr. H. F. Harwood, and Dr. F. Pounds.

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MIGRAINOUS, CILIARY, AND POST-TRAUMATIC DURAL HEADACHES

BY

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The object of this communication, part of which I presented before the Association of British Neurologists in June, 1945, is to stress the fact that three types of neuralgic headaches—migrainous and ciliary neuralgias and many post-traumatic headaches, either constant or recurrent—are susceptible of cure by the treatment of trigeminal block.

The migrainous and ciliary neuralgias, though fairly common, have been mostly neglected as supposedly incurable, the patients being either doped with analgesic and sedative drugs, which often fail even to give temporary relief, or else left alone to bear their recurrent painful attacks, often agonizing for hours or even days, for the long years from adolescence to late middle life, in the hope, often a vain one, that with the passing of the years they will ultimately gain their freedom. The slighter forms of migrainous neuralgia, lasting only a few hours at long irregular intervals, may well be left to carry on with or without analgesic sedatives, but it is the more violent and crippling types, which tend to become more and more frequent and longer-lasting as the years go by, that I claim deserve more drastic treatment, with the hope of permanent cure.

Post-traumatic headaches, following head injuries, also have often been diagnosed as "functional" and denied real treatment, and I wish to emphasize the fact that unilateral persistent or frequently recurring headaches after head injuries may be due to organic dural injury, and may persist for many years unless cured by trigeminal block in a similar manner to that which I describe for the migrainous neuralgias.

Since 1908, when I first began to use alcoholic injection of the main trigeminal branches for the treatment of tic douloureux, I have been able to separate at least three other main types of chronic facial neuralgias, totally different from trigeminal tic in their aetiology and yet often mistaken for it. Two of them are susceptible of cure by the same process of nerve block by destroying the whole or even the inner portion only of the Gasserian ganglion. A fourth type, which I described first in 1921 (Harris, 1921a, 1921b)—glossopharyngeal tic—is curable only by section or avulsion of the ninth nerve. In 1911 I began to use the terms "migrainous neuralgia" and "ciliary neuralgia" to describe two forms of severe unilateral neuralgia, recurrent and sometimes periodic, affecting the region around one eye and temple and upper part of the cheek, and even occasionally spreading behind the ear and down the side of the neck. In some cases the eyeball is the site of the pain, which then becomes congested and lacrimating. This variety of migrainous neuralgia I call ciliary (Harris, 1926b) neuralgia, because of the marked ocular congestion and the ring of periuveal reddening around the cornea. The pain differs in type from trigeminal tic in many respects, and instead of lasting only a few agonizing seconds it is sometimes continuous for hours at a time, sometimes for only ten minutes or less; but such short attacks are liable to be repeated frequently—perhaps 20 to 30 times in the 24 hours. Unlike trigeminal tic, the pain is not brought on by the movements of eating, talking, or handling the face. There is often a history of previous migraine in earlier years or in the family, and sometimes nausea is present, though vomiting is rare, and visual phenomena such as precede or accompany classical migraine are never met with. For these reasons I call this type of recurrent neuralgia migrainous rather than migraine, for I look upon it as an anterior type of migraine, and am of the opinion that its pathology is a vasomotor neurosis, sympathetic in origin, of the meningeal vessels, as compared with classical migraine, which appears to affect mainly the posterior cerebral vessels. This view I expressed in 1926 (Harris, 1926b); and again, in 1936 in two papers (Harris, 1936a, 1936b), that the afferent path of the pain was the first and second divisions of the trigeminal nerve, and therefore it was curable by partial Gasserian block of the inner two divisions.

Gasserian Block Injection

Earlier—1911 and onwards—I treated numerous cases of migrainous and ciliary neuralgia by alcoholic piqûre in the temple

and of the supraorbital and infraorbital nerves, and many excellent results were obtained, with instant relief, in some cases lasting two to five years. I attributed the good results to reflex shock to the trigeminal system, though about 30% did not benefit. Since 1921 I have increasingly replaced the peripheral piqûre treatment for true nerve-block by injections of the Gasserian ganglion, and since 1931 I have used Gasserian injection almost exclusively for migrainous and ciliary neuralgias. By this method I have been able to achieve much more certain and longer-lasting relief, in many cases undoubtedly permanent on account of the destruction of the nerve cells in the ganglion, thus shutting off all afferent impressions from the dura by the recurrent meningeal trigeminal branches. The following case is an example :

Case 1.—Mrs. H., aged 47, had suffered from periodic left supraorbital neuralgia for four years before I saw her at St. Mary's Hospital in July, 1921. The pain lasted about eight hours daily from January to April in 1917, and again similarly the next year. In 1920 she had a more severe attack; and since then, from noon to 5 p.m., has never been free for a day. On Aug. 4, 1921, I injected the left Gasserian ganglion by the lateral route, causing total anaesthesia at first, which subsequently faded partially. Eighteen years later—on Sept. 28, 1939—she wrote in reply to a follow-up letter that there had never been any return of neuralgia, though the numbness was somewhat less, but she could not eat on the numb side. She was very well, and grateful.

Since that time I have published reports of many other cases of migrainous and ciliary neuralgias (Harris, 1926b) cured by Gasserian block injection (Harris, 1936a, 1940).

Usually it is unnecessary to anaesthetize the outer division or mandibular nerve with alcohol, using only a few drops of 2% novocain solution to numb the chin and lower lip as proof of the correct position of the needle point, and then, passing the needle through the foramen ovale for another ¼ in. (6 mm.), it is possible to destroy the inner two-thirds of the ganglion with alcohol alone Before doing so it is advisable to watch the needle for a few seconds to see that there is no cerebrospinal fluid drip, which would indicate that the point is not in the substance of the ganglion but in the cave of Meckel. Should that be the case, the needle should be carefully withdrawn for about an inch (2.5 cm.), and the point depressed and then again pushed through so as to scrape through the lower margin of the foramen, when it is more likely to remain within the ganglion substance. Then inject 3–5 minims (0.18–0.3 ml.) of alcohol slowly according to the amount of permanent analgesia required. It will be noticed that little or no resistance is felt to the push of the piston—quite different from the resistance felt when injecting the third division at the foramen orifice. Should marked resistance be felt, the point is certainly not within the ganglion. Almost invariably such injection of the ganglion is followed in a very few seconds by marked conjunctival congestion and reddening, which may last for an hour or more. This is probably due to temporary paresis of the sympathetic vasoconstrictor fibres streaming over the dorsal side of the ganglion on their way to the ciliary nerves. Unless this congestion is observed, it is highly probable that the ganglion has not been properly injected, and that any analgesia produced will be temporary only. Thus it is possible sometimes to produce total trigeminal analgesia by injecting as much as 1 ml. slowly into the third division at the foramen orifice; but usually no ocular congestion occurs, and the resultant analgesia of the first and second divisions will probably disappear within an hour or two. Similarly, 3–5 minims (0.18–0.3 ml.) of alcohol into the inner portion of the ganglion is usually insufficient to produce permanent total anaesthesia, including deep pressure sense, and after a few days sensation to deep pressure and touch on the forehead will return, leaving loss of sharpness to pin-prick and loss of the corneal reflex, or even complete analgesia. This is usually sufficient to relieve the recurrent headache completely and permanently, with less danger of keratitis or trigeminal causalgia as a sequel.

Case 2.—A lady aged 43, single, had suffered for five years from attacks of pain like toothache across the right cheek in front of the ear, in the temple, over the eyebrow, side of nose, and cheek, and lately along the lower jaw, with occasional shoots in the side of the tongue. The headaches were daily, and were more or less controlled by tab. codein. co. or A.P.C. tablets. If no tablets were taken the pain would continue for two hours or more. No nausea, and never migraine. Edentulous since age of 18. Sinuses normal. Had had a bicycle accident about the time the neuralgic headaches started. On Oct. 18, 1945, I injected the right Gasserian ganglion by the lateral route, using a 70-mm. needle, s.w.g. 20. The needle passed straight through the foramen without bone being felt, and C.S F. dribbled, so the point was withdrawn 1/4 in. (6 mm.), when the flow ceased. Four minims (0.24 ml.) of 90% alcohol were then injected without using any novocain. No pain was felt, and the face quickly became numb, with total trigeminal analgesia and slight congestion of the eye. Six hours later the third division was completely normal, but the first and second divisions were still totally analgesic, and she was complaining of headache on the left side, but had none on the operated side. Three months later, when I saw her, she was perfectly well, with no recurrence of the neuralgia.

Case 3.—A more instructive case, perhaps, is that of a public-school boy aged 14, whom I saw on Sept. 5, 1945, on account of increasingly frequent recurrent attacks of pain limited to the left eye during the past three years, he having had three attacks in the last ten days. If in a car or train when the eye pain was severe he would generally vomit. He looked very ill during the attacks, which lasted some hours. When 7 years old he was struck a heavy blow with an iron golf club over the left eyebrow, causing a deep cut and subsequent scar. Between the attacks he was quite well and active. There was no ocular congestion with the neuralgia. On Sept. 10 I injected the ganglion by the lateral route, using only 3 minims (0.18 ml.) of alcohol, so as to produce only light analgesia of the ophthalmic division and thus avoid any restriction of his activities at school. Total trigeminal anaesthesia, with no ocular congestion, lasted 24 hours; the next day sensation returned on the second and third divisions. A week later there was only light tactile anaesthesia of the first division, with partial analgesia, so I allowed him to return to school without any eye shade or paraffin eye drops. He had one headache in the first week, but practically no pain since, and when seen on Jan. 4, 1946, there was only light analgesia of V. 1 and V. 2, with diminished corneal reflex, so possibly his cure may be permanent.

Post-traumatic Headaches

It was the resemblance of many post-traumatic unilateral headaches to migrainous or ciliary neuralgia that led me to try the effect of Gasserian block in their treatment, and in the last five years I have thus treated 15 cases in which the unilateral headaches appeared to be the result of head injuries. In some cases the onset of the headaches was several years after the concussion; in others the pain dated from the time of the injury. In some the pain was constant, in others intermittent and resembling migrainous neuralgia, and in at least two the type of headache was typical of ciliary neuralgia—intermittent violent unilateral ocular pain, with congestion of the eye and lacrimation. Surgeons have been rather prone in the past to look askance at long-continuing headaches following head injury, to suggest the diagnosis of "functional," and to recommend treatment by that much-abused term "rehabilitation." Such was the general impression left by the opening addresses of Jefferson, Cairns, and Russell Brain (1941) at a meeting of the Neurological Section of the Royal Society of Medicine. Anyone who has watched the recurrent attacks of ciliary neuralgia in a case of previous head injury would surely be more tolerant in believing the pain to be real in many cases that have been diagnosed as functional on account of their long persistence. It is especially the unilateral headaches that call for active treatment when sinuses, teeth, and eyes have been examined and found normal. In support of my views on unilateral post-traumatic headaches the following six cases illustrate the result of Gasserian block, which I claim proves the organic nature of the headaches. Four of these cases I showed at the annual meeting of the Association of British Neurologists in June, 1945, when I read a paper on this subject.

Case 4.—S., when aged 33, was in the retreat on Dunkirk in May, 1940, was blown out of a lorry by a near bomb explosion, was unconscious for a few seconds, but was again got on board, and had to march the last ten miles to the beaches. He was without any food for three days until put on board a destroyer, which was at once torpedoed. When standing with his head about 6 ft. (1.8 m.) beneath her gun, the blast "seemed to take the top of my head off," starting a furious headache. Landed three days later, he was sent to Aldershot, where he had the first attack of right-sided headache that became recurrent, with pain like a bad toothache in the right eyeball, which would become bloodshot and lacrimating, the pain lasting 15 to 20 minutes. These attacks have persisted daily ever since, except for an occasional intermission of four or five days and once for five weeks. Often the attacks would recur every half-hour or so, day and night, and he might have as many as 30 in the 24 hours. He was attending a hospital in 1944, where the diagnosis of "functional" was made, when he was seen by Dr. Helen Dimsdale,

who recognized the case as one of ciliary neuralgia and sent him to me on July 20, 1944. On July 24 I gave him a small inner ganglion injection of 4 minims (0.24 ml.) alcohol, which produced temporary total analgesia of the first and second divisions; but this faded off after three or four days, yet he was free of neuralgia for three weeks. By the end of August the attacks were as frequent and severe as before, and on Sept. 4 I again injected the inner ganglion, this time using 6 minims (0.36 ml.) of alcohol. This caused instant pain in the eye and forehead, and marked congestion of the conjunctiva, with total trigeminal anaesthesia. Three days later V. 3 had recovered, but V. 1 and V. 2 were still total. Since then pressure sense and touch have returned partially, but complete analgesia persists still on V. 1 and V. 2. He has never had any return of the neuralgia, though he is subject to occasional "drawing" sensations around the right eye, with some feeling of pricking, quite different from his previous pain, and which he puts up with easily. They are probably of a causalgic nature.

Case 5.—D., aged 31, nearly ten years ago was knocked unconscious for two days in a so-called friendly boxing match. About three months later he began to suffer from intermittent headaches, sometimes weekly, or he might be free for a month. These attacks became more frequent, and lasted for several days, until I saw him on Feb. 13, 1945. The pain was always limited to the right side; there was no nausea, tenderness, or ocular congestion. On Feb. 16 I gave him a partial injection of the inner ganglion by the anterior route, injecting 5 minims (0.3 ml.) of alcohol after using novocain to the third division. This produced great ocular congestion and total trigeminal anaesthesia to all forms. By May 17 he had had no pain at all since the injection: the first division was still analgesic, but could feel pressure; the second division could not perceive pinprick or touch, but felt hard pressure; the third division was normal. He has returned to work as a painter, and when shown at the meeting in June his condition was unaltered, and he was quite well and working.

Case 6.—Mrs. R., aged 41, had been subject to bad headaches across the forehead, and in 1943 fell unconscious for some seconds during one attack. In December, 1943, when she had influenza, she again fell unconscious and struck the right parieto-occipital part of her head. Since that fall the pain was continuous every day, sometimes seeming unbearable. The pain spread from the back of her head to the right side of the forehead and behind the ear, and the scalp was very sensitive in the region of the blow, though it had not been cut. When the pain was at its worst it would keep her awake, and the eye would lacrimate and the eyelids swell, the pain spreading under the eye; there was no vomiting. I saw her first on April 11, 1945. She had previously attended another "nerve" hospital, and had been told that her case was functional and she must attend her own doctor. On that day I injected her right Gasserian ganglion, first injecting the whole ganglion with a few drops of 2% novocain as a test. As this at once abolished the headache completely, I followed on with 5 minims (0.3 ml.) of 90% alcohol, with resultant total trigeminal anaesthesia, which was still unaltered next day; but there was no return of headache, and the tenderness of the scalp had disappeared. On May 25 there was still total anaesthesia of the first division, with slight return of sensation on the second and third divisions. She was feeling very well and experienced no pain. The condition remained unchanged when she was shown at the meeting in June.

An interesting point to note here was the very slight recovery of sensation on the second and third divisions, no doubt due to the previous infiltration of the whole ganglion with novocain, which prevented localization of the alcohol in the inner portion of the ganglion only.

Case 7.—C., aged 34, when a boy of 15 received a severe blow on the right side of the head, which was crushed by a lorry against a lamp standard, the scalp being badly torn on the right parieto-occipital region, where he bears an irregular scar 8 in. (20 cm.) in length. Headaches began on the right side a week later, four or five times a week, at first lasting as short a time as ten minutes, often four or five times a day. In December, 1940, he joined the Army, and in 1941 went through the North African campaign from Alamein, in the artillery, but the gun blasts made his headaches worse, and he was put to other work. The pains continued daily, and he was sent back to England in February, 1945. I saw him at St. Mary's on March 20, 1945. He gave a history of two attacks of migraine, one eleven years ago after falling on his face from a lorry, followed by numbness of the right lips, tongue, and face, with loss of speech for 20 minutes; and he had another similar attack in the desert during the campaign. On March 27, during an attack of headache, I gave him a Gasserian novocain test, which at once abolished the pain until sensation returned in about an hour. On April 9 I injected the ganglion with 7 minims (0.42 ml.) of alcohol, producing total trigeminal anaesthesia, which remained unaltered when the case was shown in June at the meeting; there had been no return of his headaches, and he had been doing regular work.

The following case is another good illustration of violent intermittent ciliary neuralgia developing six months after an extremely heavy blow to the head and face.

Case 8.—On Jan. 13, 1944, a man aged 36 was struck a violent blow across the occiput by a heavy iron girder when unloading a lorry, crashing his head against the asphalt road, cutting his right eyebrow, and fracturing his frontal bone, causing bleeding from the right ear, which is still partially deaf, conjunctival haemorrhages in both eyes, and bruising the whole face, which was much swollen. He was taken into an E.M.S. hospital, where he was kept for five weeks; he lost consciousness for a week after admission. He had a good deal of headache for several weeks, and then tried a light job, but six months after the accident he was attacked by a new kind of headache, which would start suddenly with pain behind the eyeball, the right eye becoming blood-red. These headaches might last from 20 minutes to four hours, occurring at first once a week or so, and latterly more often. From June, 1944, he had numerous petit mal attacks for the next six months, falling unconscious; these ceased in December, 1944. The pain would attack the back of the eye and above the eyebrow and the upper cheek on the right side, and has been so severe that he has walked the street at night in his pyjamas and dressing-gown, crazy with pain, and in April, 1945, he made an attempt at suicide by gassing himself. He was sent to me by Dr. Hinds Howell on June 30, 1945; his account of the recurrent neuralgic attacks was typical of ciliary neuralgia, and almost certainly a sequel to his head injury eighteen months previously. This case may be compared closely with Case 4, already described. I injected his inner ganglion with 5 minims (0.3 ml.) of alcohol on June 30, producing total anaesthesia of V. 1 and V. 2 which was still unchanged when he was seen on July 24, having had no more pain. In reply to a follow-up letter, he wrote on Feb. 24, 1946, that the numbness persisted on forehead and cheek, and the headaches were practically cured.

In my experience the ciliary neuralgias are more sudden in onset and more violent in character than the other form of migrainous neuralgia that I have described, though both forms show an undoubted relationship to migraine. What the cause of the ocular crises and congestion is in the ciliary form I have no suggestion to offer, beyond the inference that sympathetic disturbance is considerable. Their cure by trigeminal block seems sufficient proof that the painful stimuli are carried centrally by the recurrent meningeal trigeminal branches.

Case 9.—A girl—G., aged 21—was sent to me on Nov. 13, 1941, for almost continual right-sided headaches since the age of 14, never being free for more than a day or two. There was no vomiting with the pain. When 3 years old she fell from a height of two stories from a fire escape on to a concrete floor; profuse vomiting followed. On Nov. 20 a Gasserian novocain test dispersed the headache at once, so I then injected 4 minims (0.24 ml.) of alcohol deeply into the ganglion, producing total anaesthesia to all forms on V. 1 and V. 2. This has practically persisted unaltered, for when last seen on Aug. 31, 1944, only hard pressure was perceived on forehead and cheek, though V. 3 was completely normal. There has been no recurrence of the hemicrania. The depth of the anaesthesia persisting on V. 1 and V. 2, though only 4 minims of alcohol were used, may be compared with the similar result in Case 6, in which also a preliminary Gasserian infiltration with novocain was done.

Pathology of the Migrainous Neuralgias

What can be the mechanism of migrainous and ciliary neuralgias and post-traumatic headache? It seems inconceivable that the scalp can be the source of these afferent stimuli; there remain the skull and pericranium, the dura mater, pia-arachnoid, and the brain substance, in addition to the meningeal and cerebral blood vessels. The skull, brain substance, and pia-arachnoid are known to be insentient, and can be cut and burnt without any pain being produced. Penfield and his co-workers have shown that, though large areas of the dura are also insentient, yet in the region of the meningeal vessels and the dural sinuses stimulation or dragging and pressure on these structures may cause acute pain, which may be referred even down the side of the neck; and these stimuli are carried centrally by the afferent fibres in the recurrent meningeal branches of the trigeminal nerve, as can be proved by sectioning the posterior root of the fifth nerve or, as I have shown, by Gasserian nerve block. It is well known that intravenous injection of histamine produces no headache on the analgesic side after Gasserian injection. Penfield has insisted that it is the first division of the fifth nerve that is the most important in this connexion; I am entirely of the same opinion, as I have found that analgesia of the ophthalmic division is essential in the cure of migrainous

and ciliary neuralgia and many post-traumatic headaches. Usually I prefer to obtain permanent complete loss to pin-prick on the first division, with light analgesia of the second division, while rarely is third-division analgesia required. Penfield and Norcross (1936) assume that in cases of severe head injury the brain slides across the face of the dura at the arachno-dural interface, and that it does not necessarily at once regain its former position. Then adhesions may form, which become stretched as the brain tends to return to its normal position, and when these adhesions are attached to a sensitive area of dura, such as dural sinus or large meningeal artery, pain results. Rowbotham (1945) states that migraine headaches sometimes occur as a sequel to acute cerebral trauma or such headaches may be aggravated by head injury. He mentions visual spectra and hallucinations as occasionally accompanying the attacks, but I have never known these occur in migrainous neuralgia, nor in the post-traumatic headaches that I have met with. Penfield and McNaughton (1940) have investigated the nerve supply to the dura, and they suggest that most of the dural branches, even those which appear to originate from the second and third divisions of the Gasserian ganglion, really originate from the nerve cells belonging to the ophthalmic division. Penfield has found, during operations under local analgesia, that the dural sinuses and the large veins entering the sinuses are especially sensitive. The upper surface of the tentorium and the sagittal or superior longitudinal sinus, and the anterior fossa, are supplied by branches from the ophthalmic division, while the middle fossa and the middle meningeal vessels are supplied from recurrent branches of the second and third divisions; but dissections and staining of the dural nerves entering the ganglion in the rhesus monkey suggest that those branches which appear to arise peripherally from the second and third divisions really arise from nerve cells in the ophthalmic division. He has found that stimulation of the anterior two-thirds of the sagittal sinus may cause pain radiating downward into the neck, and I have occasionally noted that the pain in some migrainous neuralgias may be referred behind the ear and downward into the side of the neck.

Migraine

Not only migrainous and ciliary neuralgias may be thus successfully and permanently cured, but cases approximating more in type to migraine itself may also react equally well to the treatment.

Case 10.—Mrs. E., aged 50, had been subject to recurrent "bilious" headaches at her monthly periods since the age of 14. These were invariably on the right side and at first lasted 2 to 3 hours, but for the last four years the attacks had been more frequent and lasted longer—24 to 27 hours—though the menopause became established two years ago. The pain would be present on waking, always over the right eye and at the back of the eye, which was tender but not red, and vomiting began early. Phenobarbitone and aspirin only increased the vomiting. When I saw her on Jan. 2, 1946, there were no abnormal physical signs, and the systolic blood pressure was 125 mm. There were never any visual spectra or other ocular phenomena. On Jan. 7 I injected the inner Gasserian ganglion with 5 minims (0.3 ml.) of alcohol while an attack was in progress, the pain ceasing instantly as soon as anaesthesia was produced. This was still complete on V. 1 and V. 2 next day, when she returned home. Five weeks later she wrote very gratefully, saying she had had no further trouble of any kind.

This case is unlike migrainous neuralgia on account of the profuse vomiting, and differs from most migraines in its relation to the monthly periods. I have had no opportunity of trying Gasserian injection in a case of classical migraine with visual spectra, but I think it very probable it might succeed equally well if the attacks were mainly limited to one side.

Atypical Neuralgia

A form of chronic facial neuralgia regarded in America as atypical is what I have described as chronic neuralgia of the jaws (Harris, 1926a). This may affect the upper or lower jaw on one side only, or it may be bilateral. It is often described as a "drawing," "pulling," "burning" pain, constant, though varying in severity. I have known it follow massive extraction of the teeth. It is commoner in women than in men, and often a strong neurotic element is present. It closely resembles the causalgia which may follow Gasserian injection or root resection, when it affects the maxillary region; but in a few cases it is restricted to the mandibular area. No treatment by nerve section or injection is of any benefit, and it is most important to recognize this type of neuralgia, as operation or injection often appears to make the patients worse, and the anaesthesia produced affords a further ground for complaint. The type of pain described by Sluder probably included this form as well as some migrainous neuralgias. Temporary improvement by cocainization of Meckel's ganglion or even of the Gasserian ganglion is of little value, if it relieves at all. Leucotomy might be considered in long-standing depressed cases.

Summary

Unilateral headaches resembling migraine in some respects, affecting the region around the eye and temple, may be recurrent for years, and have hitherto been either classified as migraine or wrongly ascribed to ocular or sinus disorders, or else included under the term "atypical neuralgia."

A variety of migrainous neuralgia I have named "ciliary neuralgia," on account of the marked ocular congestion and lacrimation accompanying the ocular and periocular pain in these cases. This type is often more violent and characteristic, but both these varieties of headache are curable by alcohol Gasserian injection, and are no doubt due to vasomotor disorders in the meningeal vessels or dural sinuses. Since these areas probably have their sensory supply entirely from the recurrent meningeal trigeminal branches, their cure by Gasserian block is to be expected.

Post-traumatic headaches may be of either of these two types of migrainous neuralgia, or they may take the form of a constant pain.

When they are unilateral and persistent for months or years it is probable that they are organic and not functional, and that they are due to dural adhesions resulting from the cerebral trauma. Gasserian nerve block by novocain injection should be tried, if possible during the headache. If this is successful in at once abolishing the pain, then 5 minims (0.3 ml.) of 90% alcohol should be injected deep into the ganglion; permanent cure often results if the analgesia of the first and second divisions persists.

The same results may be obtained by surgical treatment, sometimes of the meningeal scar itself, if it can be found, or by reversed subtotal posterior rhizotomy, by cutting the inner ophthalmic fibres close behind the semilunar ganglion, in place of the usual subtotal resection of the outer portion of the root, as used in Frazier's operation for trigeminal tic. Whether Gasserian injection or surgical resection is preferred is a matter for the individual choice of the operator. Both have much the same effects, but I claim that the injection method is the more delicate, and preferable in the majority of cases; moreover, it is free of all risk to life.

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THE CATHETER AND THE PROSTATE*

BY

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If the prostate is removed with the strict asepsis of the neurosurgeon I have proved that the dangers of prostatectomy are enormously diminished.† The microbe, as ever, is our foremost enemy. In-dwelling rubber tubes, whether suprapubic or transurethral, are high-roads for infection. The normal urethra is usually a mildly infected channel, and the prostate-blocked urethra almost invariably so. In over 200 cases I have shown that sudden decompression of the chronically well-distended bladder is beneficial, provided that the operation is aseptic and the prostate at the same time is removed, because in some cases the prostate may block the ureters as well as the urethra.

* Being a portion of a paper read before the Medical Society of London on March 11, 1946.

† *Brit. J. Surg.*, 1945, **33**, 41.

My operation, briefly, entails a twelve-hour preparation with chemotherapy, low spinal anaesthesia, never as high as the umbilicus, a rapid emptying of the bladder even if it holds five pints (2.8 l.) of chronic residual urine, a gentle prostatectomy by the transvesical route, and the excision of the trigone extending almost to the ureters and the interureteric bar so as to make the bladder one with the prostatic cavity. Bleeding is patiently controlled by my diathermy haemostat. Ligatures are never used in the course of the whole operation. Every moribund piece of tissue is meticulously removed, thus providing conditions favourable to the continuance of asepsis. A thin-walled urethral tube is passed invariably in a retrograde fashion in order that the bladder and prostatic cavity can be drained for a few hours or a very few days. Clotting is prevented by sodium citrate and the bladder is securely closed.

This operation produces so little shock that other major operations are often performed at the same sitting. The patient gets up the next day. The blood urea descends far more rapidly than after simple suprapubic drainage, when it invariably rises for a time, frequently resulting in a higher mortality than prostatectomy itself. The patient's total stay in hospital is usually two weeks, and is often less. The mortality in 565 consecutive cases was 4.3%. This compares favourably with the pre-operative and post-operative mortality of other methods. The risks are diminishing with improvements in anti-infective technique. Perhaps, more important, a profoundly septic incident in the life of an old man has thus been avoided and he reports later with aseptic urine instead of that lifelong low-grade infection so frequently met with in the two-stage operation. This aseptic procedure permits a far higher standard of operability. Only eight out of 573 cases were refused operation, and those that were accepted included twelve cases with initial blood ureas of well over 200 mg. per 100 ml.

Exactly 75% (18) of the deaths were due to uraemia; and post-operative increase of uraemia is always due to infection. The commonest cause of infection is the catheter, usually passed by the practitioner for the relief of acute retention or in the endeavour to avoid a prostatectomy. In my earlier cases I occasionally infected the patient by an antegrade passing of a drainage catheter at the end of the operation or by a cystoscope. By a simple technique a retrograde passage of a tube is now always possible. At least two weeks should elapse after the dilatation of a stricture or the passage of a cystoscope before a prostatectomy is done.

The following table shows the results in these 565 cases both with and without catheterization or other instrumentation.

Results of Instrumentation (Usually Catheterization)

	Without Instrumentation		With Instrumentation		Total	
	No.	%	No.	%	No.	%
Temporary suprapubic leakage ..	5	1	19	19·9	24	4·3
Epididymitis	3	0·6	8	8·3	11	1·9
Mortality	15	3·2	9	9·4	24	4·3
Average length of stay in hospital after operation	12·9 days		23·3 days		14·8 days	

These figures surely suggest that all cases of retention of urine, complete or incomplete, should be operated upon before a catheter is passed and that all dubious prostatic obstructions which require investigation and instrumentation should be left for some weeks to permit complete recovery. If the pre-operative catheter can increase the chance of temporary suprapubic leakage by 20 times it is a nuisance; if it increases the risk of epididymitis by 14 times it is a menace; and if it trebles the mortality it may be a lethal weapon.

The in-dwelling catheter is a minor offence compared with the suprapubic tube with its microbes clamouring for admission from above. Suprapubic drainage for any form of prostatic obstruction should be abandoned—even if it is performed for the relief of patients with blood ureas over 200 mg.; to this uraemia is added the uraemia produced by infection, and thus the patient's end is often hastened.

Summary

An earnest plea is made for the application of the principles of "absolute" asepsis in prostatectomy.

Two-stage operations and suprapubic drainage should be abandoned.

Proof is established that the catheter should never be used before prostatectomy.

Acute prostatic retention demands immediate operation. It is suggested that "aseptic prostatectomy" is at least as safe as catheterization.

FATIGUE SYNDROMES IN WEST AFRICA

BY

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The purpose of this article is to record some observations made upon a number of British Army personnel seen in regimental M.I. rooms in West Africa Command during a tour of duty there. They showed signs of physical and mental fatigue, and were chosen for study because they seemed to illustrate the relation of climate to ill-health in the moist Tropics. In many cases climate in itself appeared to be only a contributory cause in the presence of other factors, such as toxaemia and mental disharmony. An attempt has been made to analyse the aetiology of the various fatigue states described, and to show the role of climate as a cause of such illness.

Clinical Findings

The cases, 86 in number, were classified as follows:

	Cases
A. Fatigue syndrome:	
(1) Presenting characteristic signs of simple physical and mental fatigue	41
(2) Presenting signs of exaggerated or abnormal psychological reactions	14
(3) Related to toxic illness	9
B. Psychoneurosis—showing signs of fatigue	16
C. Depressive state—with fatigue	3
D. Psychosis—with fatigue	1
E. Post-concussion syndrome—with fatigue	2

A. Fatigue Syndrome

Subgroup 1.—The presenting picture resembled that found in any state of fatigue following prolonged physical or mental exertion. The amount of exertion and the degree of fatigue were disproportionate, and the only additional stress factor recognized was the exhausting nature of the climate. No mental anomalies were observed, and the patients, who represented a variety of constitutional types, had all succeeded in adjusting themselves to their environment. The symptoms were tiredness, lassitude, headache, forgetfulness, slight loss of interest, impaired powers of concentration, and mild depression.

Case 1.—Warrant officer aged 30; six months' service in West Africa; good health previously. Became easily tired, with headache and difficulty in concentrating in a rather noisy workshop. Relieved by short spells of lighter duty in quieter surroundings.

Case 2.—Officer, aged 35, of strong constitution and dynamic personality; 17 months' service in West Africa. Became easily tired, with headache and difficulty in concentrating, and was unrefreshed by sleep. He adjusted his economy of energy output and remained fit for duty.

Case 3.—Officer of asthenic type; complained that soon after coming to the Tropics he became lethargic, with faulty memory and reduced power of concentration. Slight general retardation persisted, but the patient remained happily adjusted to the disability.

Subgroup 2.—Here fatigue was the dominant feature in a state resembling simple anxiety neurosis of recent origin. These cases gave no previous history of neurosis, and showed no gross psychopathic traits, although in some instances seeds of neurosis were present. They expressed no personal anxieties other than a concern about the exhaustion and nervousness which had overtaken them. Timid and emotionally immature types appeared to be particularly prone to develop this more severe manifestation of fatigue. Most of these patients improved with rest, reassurance, and in some cases mild sedation. Only one required to be admitted to hospital. A number of

them were met by chance in another station nine months later, and they all appeared to be in good health.

Case 4.—Aged 28; 12 months' service in West Africa; average physical constitution; rather timid. Became tired, depressed, tremulous, and worried about his condition. After adequate rest and reassurance, he recovered sufficiently to justify continuation of service in the Tropics.

Case 5.—Aged 22; good athlete; 12 months' service in West Africa. Became extremely tired, with "leaden limbs," tremor of hands and voice, and mild depression. He was distressed about the symptoms, which were quite new to him. A short course of mild sedation was followed by marked improvement.

Case 6.—Aged 20; physically fit, with no history of previous nervousness. He became easily tired after 10 months' tropical service. Soon fatigue was pronounced, with depression, marked anxiety, profuse sweating, inability to concentrate, loss of interest, and fear of insanity which was alleviated by reassurance. This patient did not respond well to treatment, and had an anxiety neurosis when he left the Tropics shortly afterwards.

Subgroup 3.—Fatigue syndrome such as described above was a common sequel to fevers and toxic illnesses—e.g., malaria, amoebic dysentery, food-poisoning, and furunculosis. In connexion with malaria, a number of patients suffering from chronic fatigue were found to have malaria parasites in their blood. Sometimes fatigue was accompanied by anxiety and mild depression, which usually responded to rest and reassurance. However, convalescence was slow and some degree of disability persisted for several weeks as a rule, sometimes even for months. Retarded convalescence appeared to be largely due to the influence of the climate.

Case 7.—An officer, after eight months in West Africa, had a severe attack of amoebic dysentery, which was followed by physical and mental fatigue so persistent that he was invalided home.

Case 8.—An officer suffered from fatigue and a mild anxiety state following tonsillitis. The symptoms resolved with adequate rest.

Case 9.—A sergeant clerk, aged 25, with 26 months' total service in West Africa, developed a mild anxiety state with depression, headache, listlessness, and inability to concentrate. Inquiry revealed that he had been tired and depressed on several occasions in the Tropics, especially after each of a series of attacks of malaria. A conscientious, rather obsessional man, he responded very well to treatment and completed his full tour of duty with a maintained improvement in health.

B. Psychoneurosis

In this class the clinical picture was predominantly that of a psychoneurosis such as one finds in temperate climates. In all cases there was definite evidence that neurosis had manifested itself prior to tropical service. Here the element of fatigue was more severe than one would expect to find accompanying the same neurosis in a temperate climate. It seemed that this fatigue must be largely due to climatic stress. These patients had been accustomed to the discomfort of neurosis, and affective reactions were milder than in the fatigue syndromes described in Class A, where neurotic feelings were being experienced for the first time and distress was consequently acute.

Case 10.—A corporal aged 22 reported sick during his second month of service in West Africa. He was suffering from fatigue, probably due largely to the heat, but he also described symptoms which revealed a clear picture of a psychoneurotic constitution, with a positive family history. Obsessional traits were marked, and sleep-walking had occurred in childhood.

Case 11.—A staff-sergeant aged 26 complained chiefly of fatigue, but there were signs of anxiety state and mild depression, with a history of similar illness before entering the Tropics.

These patients had to be reassured from time to time, but were able to carry on satisfactorily. Included in this class were a few cases with features suggestive of true psychopathic personality. Traits observed were: inability to settle at a job of work, lack of a normal sense of responsibility, emotional immaturity, and cyclothymic mood swings. Fatigue was not pronounced, but there was evidence to suggest that they had become emotionally less stable since entering the Tropics.

C. Depressive State

Fortunately cases of severe depression were rarely seen. In these patients, all of whom required to be invalided, there were definite causal factors at work, which ruled out climate as a primary cause. In fact, climate and environment seemed to play a minor part as a precipitating or aggravating influence. They all showed marked evidence of general fatigue.

Case 12.—A soldier aged 36 was seen, a few weeks after arriving in West Africa, with rather severe endogenous depression, morbid ideas of unworthiness, and a history of previous attacks.

Case 13.—A sergeant, aged 25, after nine months of satisfactory service in West Africa became tired and depressed, with an obsession that he was developing sleeping sickness. Seen after attempted suicide, he was very retarded. The case history revealed latent neurotic traits of long standing, and a domestic problem which had produced mental conflict since leaving home.

D. Psychosis

Only one case was encountered—that of a senior N.C.O. He appeared at first to be an obsessionally conscientious type who was becoming tired out. Soon he showed psychotic features, with grandiose and paranoid ideas and complete lack of insight. Inquiry proved that he had been a "difficult maladjusted" person in home units. Probably in this case the climate, together with other environmental factors, laid an additional strain upon a constitution already abnormal.

E. Post-concussion Syndrome

Two patients were classified separately. The chief complaint was of headache and tiredness. Both had been concussed some years previously, and post-concussion syndrome had been diagnosed by neurologists in the United Kingdom. In addition, both had psychoneurotic traits, and climate seemed to act only as an aggravating factor in these cases.

Discussion

Observers in different theatres of activity can be quoted in support of the theory that environment is only partly to blame for the fatigue syndromes and mental illnesses which occur under stress.

Rodger (1943), in discussing effort syndrome in Iceland, lays emphasis on psychological predisposition, concluding that conditions of service in Iceland were not causative factors, but only aggravating to a minor degree. Stephenson and Cameron (1943), discussing anxiety states in the Navy, stress the significance of the degree of stability of the individual patient and the number of stress factors making for continued effort. Symonds (1943), in his lectures on human response to flying stress, describes a variety of stress factors, including fatigue of vision and hearing, effects of acceleration and decompression, and anoxia, but he concludes that "the emotional tension resulting from the prolonged exercise of courage is the most important element of stress." Craigie (1944), reporting on military psychiatry in the Middle East, classifies the aetiology of psychological breakdown into predisposing factors (heredity, constitution, morale) and precipitating factors (domestic separation, climate, fatigue, and battle stress). Minski (1945), discussing psychological reactions in the wounded, says: "The degree of severity of a wound bears little or no relation to the development of a neurosis."

Mills (1945) describes experiments with white rats, showing that these animals are reduced to a slow pace of living by tropical temperatures, that their ability to ward off and fight infection is reduced, and that their capacity for learning and remembering is impaired. Similarly, meteorological conditions are shown to have certain effects upon human beings. When the barometer is low, restlessness, exhaustion, depression, and muddled thinking are common, with consequent feelings of frustration and hopelessness in some people. This is illustrated in West Africa, where spells of oppressive weather coincide with general depression, while favourable changes in temperature, humidity, and air movement produce a dramatic increase in vitality and elevation of spirits.

Stewart (1945) describes heat fatigue occurring in industrial workers in hot weather, especially with high atmospheric humidity and diminished air movement. Adequate replacement of lost fluid together with sodium chloride proved to be an effective prophylactic. This also applies in West Africa, where the ingestion of fluid and salt after strenuous exercise speeds up recovery from fatigue.

McDowall (1943), discussing man's biological adaptation to environment, writes as follows: "The effect of lack of mental

adaptation is dealt with in relation to conflict, where it seems that, just as excessive heat, cold, high altitude, or necessity to work hard or to fight brings about the bodily reactions which we group under the heading of increased sympathetic activity in animals, so also in man lack of mental adaptation brings about exactly the same bodily effects which if continued will have a seriously harmful effect on the happiness and health and length of life of the individual." And again: "Various mental states have a profound effect on the activity of organs of the body and may so disturb them that pathological states may result. There is indeed no hard-and-fast distinction to be drawn between functional upset and pathological states, for one may merge into the other. By far the most important change which occurs is increased activity of the sympathetic portion of the autonomic nervous system. . . . It occurs in forms of mental activity, involving alertness, attention, concentration, but is intensified in fear and in its antithesis, anger and rage. Anxiety produces less intense but more chronic states. Essentially the changes are those which prepare the animal for physical activity and make the muscles more efficient."

Good mental adaptation to life is characterized by a fair measure of satisfaction of the natural instincts—self-realization, sexual and social. Frustration of these leads to mental conflict, with varying response. Submission to circumstance may be a happy solution or may be accompanied by depression. Escape from conflict can be achieved by alcoholic over-indulgence and hysterical reactions. While, on the other hand, conflict may be allowed to continue, resulting either in a normal struggle against difficulties or in exaggerated responses such as the development of anxiety neurosis.

These mental mechanisms are all liable to colour an illness which at first sight might be considered due to climatic stress, and this applied to some of the cases seen in West Africa.

The 64 cases of fatigue syndrome referred to in this paper (Group A) were probably alike in their mode of origin and course of development, differing only in degree of severity, this being determined by several factors (internal and external)—physical constitution, personality, toxic illness, climate, and other environmental stress. In a few of the severer cases of fatigue syndrome it was thought that the term "tropical neurosis" was justifiable, because true neurotic reactions developed without previous history of such, and these reactions were not resolved by simple rest and reassurance, thus differing from many of the cases of sympathetic overactivity.

Conclusions

It would appear that everyone living in West Africa is liable to experience some degree of tropical languor, caused by the climate. Most people adapt themselves to the limitation thus put upon their activities.

However, a certain proportion develop a fatigue syndrome which may lead to considerable disability. This is sometimes accompanied by overactivity of the sympathetic nervous system, so giving a picture of anxiety state which is usually temporary if it occurs in the absence of any other predisposing or contributory cause. The enervating climate may find in a weak physical or mental constitution fertile soil for producing its ill effects. Also, resistance to illness may be undermined not only by the climate but by other factors, such as toxaemia, excessive physical exertion, alcoholic over-indulgence, and psychological disharmony.

The West African climate appears to have an aggravating effect upon pre-existing psychoneurosis. Climatic stress can precipitate and aggravate depressive states and psychoses.

A few contributory factors require special note.

Physical Exertion.—When carried beyond a certain optimum period, undue fatigue results, with a delay in recovery.

Alcohol.—In strict moderation alcohol appears to be harmless, and is often a positive preserver of mental contentment. Too much alcohol is obviously harmful, lowering general resistance to illness in proportion to the individual's tolerance and the amount consumed.

Insomnia.—This is sometimes caused simply by the restless discomfort of hot nights, producing tiredness and irritability.

African Native.—Many people find it difficult to adjust themselves with equanimity to the ways of the African native, and this causes a feeling of frustration and irritability, with consequent tiredness and depression.

Finally, it is said that, when any struggle is prolonged, moral force, and not physical, will generally decide the issue. This seems to be true of West Africa, where the total personality, with its physical, intellectual, emotional, social, and moral components, must be considered when studying reactions to climatic stress.

I would like to express my gratitude to Brig. G. M. Findlay, C.B.E., Consultant Physician to West Africa Command, for permission to publish this article, and for much helpful advice; also to Lieut.-Col. A. C. Stevenson, R.A.M.C., formerly Assistant Director of Hygiene, West Africa Command, for his interest and advice.

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IDENTICAL DEFORMITIES IN THE NASAL SEPTUM OF A PAIR OF IDENTICAL TWINS

BY

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A review of the literature on identical twins shows many records of similar abnormalities in these siblings. The following are some of the conditions described: diabetes, allergy, thrombo-angiitis obliterans, epilepsy, exophthalmic goitre, otosclerosis, hearing defects, squint, polydactylism, inguinal hernia, hydrocephalus, congenital dislocation of the hip, hare-lip and cleft palate, and dental defects. There are only two recent references to nasal conditions. Furniss (1938) mentions the occurrence of mesial dermoid cyst of the nose in identical twins, and Pastore and Olsen (1941) record the absence of frontal sinuses and the presence of congenital bronchiectasis in identical twin sisters.

There has been no record of nasal septal deformities, and I feel that the case described below should be added to this considerable list. Some interesting conclusions can also be drawn from discussion of the occurrence of this deformity.

These identical twins, now aged 22, are serving with the Royal Air Force in the same unit. They were both admitted to the medical unit of an Emergency Medical Service hospital in October, 1945, suffering from bronchial asthma. They were referred to the ear-nose-and-throat department for examination, on account of suspected disease of the maxillary antra, which had been revealed during routine radiological examination of the paranasal sinuses. Their medical histories are interesting in connexion with allergic states in identical twins. Briefly they are as follows:

Twin No. 1

The patient had had attacks of wheezing since childhood. These start early in the morning, last approximately 24 hours, and are most common in summer; no cough or sputum. Occasionally there is sneezing. Otherwise he is healthy. He has a history of pneumonia at 2 years of age, bronchopneumonia in 1939, and attacks of eczema until leaving school. His father, mother, younger brother, and younger sister are healthy. The twin brother has a similar history to his.

Examination showed him to be well nourished. There was marked asthmatic wheezing, but no finger-clubbing. Respiratory movements were satisfactory. There was no chest deformity or impairment to percussion. Breath sounds were vesicular. Numerous inspiratory and expiratory rhonchi were heard. Vocal fremitus and resonance were normal. No other abnormalities were found, except changes in the antra seen in a radiograph of the paranasal sinuses.

Twin No. 2

Until May, 1945, this patient had had only a few mild attacks of asthmatic wheezing of short duration in the mornings. Since he went to France in May, 1945, the attacks have become much more severe. They always begin in the mornings and are aggravated by exercise. They do not coincide with his twin's attacks. He has noticed that eggs in the diet precipitate an attack. He had influenza at 9 years of age, and eczema mildly until leaving school. It was noticed that his brother (Twin No. 1) took illness much more severely than he

did. Respiratory and other examinations gave the same findings as in the case of his brother.

A rhinological examination carried out on these twin brothers showed that each had a severe septal deformity. These deformities were identical and were so gross that, had they been traumatic, they must have been produced by an identical trauma. One could only conclude that they were the result of a congenital malformation. There is so little variation between the two septa that a description of one will cover both cases.

The nasal septum shows a marked S-shaped deformity. There is a thick bony ridge, seen from the right side, extending almost from the anterior nasal spine backwards and slightly upwards. The ridge crosses the line of the inferior turbinate at the junction of the middle and posterior thirds. It touches the inferior turbinate at this point. In their lower parts the septal cartilage and perpendicular plate of the ethmoid lie over to the left, but higher up and more posteriorly they are displaced towards the right ethmoid capsule, and prevent any deeper view of the nasal cavity beyond this point.

The cartilage of the septum anteriorly is bent to form a pronounced step to the left, as if it had been dislocated from the bony groove in the maxilla and vomer in which it usually lies.

On inspecting the septum from the left side one sees a sharp, depressed gutter corresponding to the ridge or spur seen on the right side. This is overhung by the lower edge of the displaced septal cartilage. The septal cartilage is deviated anteriorly so severely towards the left wall of the nasal cavity that it prevents a free view of the middle meatus on this side. It touches the inferior turbinate near its middle third.

There are a few minor differences in the septal curves, but these hardly detract from the almost identical appearances of both nasal septa. One would immediately describe the deformities as reproductions of one plan of development.

Study of the radiographs taken shows that there is an almost exact similarity of the frontal sinuses—a point often noted in the investigation of identical twins. When the plates are superimposed the outlines coincide almost exactly. In the plate of Twin No. 2 slightly stronger markings of incomplete septa in the frontal sinuses are visible. The antra in both cases are exactly similar, and show a thickening of their mucous membrane lining, presumably allergic. The bony septal deformity can be clearly seen in both plates.

Discussion

Zuckerkandl (1892) gives a very full description of septal deformities. He contends that the massive ridge, or crista lateralis, almost always runs from the anterior nasal spine to the rostrum of the sphenoid. He points out that, even in cases of severe nasal injury with depression of the nasal bones, the cartilage may be deviated or fractured, while the bony septum is normal. The vomer remains quite straight, there is no sign of a crista lateralis, and the bend in the perpendicular plate of the ethmoid may be negligible. This has led him to believe in the existence of a physiological form—i.e., a deviation occurring in an intact nasal framework and a normal septum in which there is no question of injury.

Among possible causes he suggests the following: (1) irregular growth of one of the bony plates of the perpendicular plate of the ethmoid or of the vomer; (2) the continued growth of the septum where the maxillae remain undeveloped (this, he considers, would account for the relative infrequency of septal deformity in non-European races); (3) inheritance of a large nasal organ from one parent and a small upper jaw from the other.

StClair Thomson (1926), reviewing the literature on nasal septal deformity, shows that it is much more common in European than in non-European skulls: 75% of the former group show some degree of deviation. In primitive races it is very uncommon. The Red Indian, with his aquiline nose, seldom shows any deformity. This does not support the theory held by many that traumatism early or late in life is the commonest cause of septal deformity. StClair Thomson holds that heredity does not seem to play an important part in the transmission of a tendency to septal deformity.

Galton (1875) has shown that the study of twins affords a means of distinguishing between the effects which result from inherited tendencies and those which are imposed by external influences during their after-life.

It is well known that monozygotic twins are alike in their whole hereditary disposition, while dizygotic twins are, from the hereditary point of view, no more alike than ordinary brothers or sisters. The dissimilarity between monozygotic twins can be likened to that between the right and left halves of the body of one person. Practically all differences in monozygotic twins are non-hereditary (cf. Verschuer, 1939). It does not follow, however, that all similarities are necessarily hereditary, since monozygotic twins have, more often than dizygotic twins, a much more uniform foetal environment (monochorial) (Pontecorvo, personal communication, 1946).

Conclusions

The deformity in the nasal septa of the identical twins described in this paper is congenital and may well be hereditary. Study of the septa of a series of monozygotic as well as dizygotic twins, and the investigation of pedigrees, are, however, necessary before a theory can be formulated, but I hope that the recording of this case may suggest a line of inquiry which would give a definite answer to the vexed question of the causes of septal deviation.

If such a developmental abnormality can be genetically determined, then a proportion of cases of septal deformity may be the result of an inherited tendency.

I have to thank Dr. James Johnstone, O.B.E., superintendent of the Emergency Medical Service hospital, for his permission to publish these records, and Dr. G. Pontecorvo for his advice on the question of heredity.

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EXAMINATION OF THE LOWER UTERINE SEGMENT IN CASES OF SUSPECTED PLACENTA PRAEVIA

BY

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It has become generally accepted practice that exploration of the lower uterine segment per vaginam in cases of suspected placenta praevia should be postponed until all preparations have been made for whatever form of treatment may be indicated by the individual case. In short, no exploration will be made until the operator is gowned, ready to perform Caesarean section.

In my earlier cases it was noted that quite a considerable loss of blood may take place in the time which elapses between the withdrawal of the examining finger and the delivery of the baby by section. In a few this loss occasioned much anxiety, and in some was the determining factor in rendering blood transfusion necessary. Happily, in no case was it fatal. The technique herein to be described will be found to prevent any serious loss at this time in cases where the cervix has not been taken up.

Technique

The method calls for the co-operation of a trained assistant. Either the operator or the assistant makes the examination while the other member of the team stands ready. The whole or half hand is introduced into the vagina; the index or middle finger is now inserted through the cervical canal and the placenta sought. I usually employ the middle finger as, owing to the situation of the cervix, the use of this finger causes much less crowding of the hand in the vagina. Should the placenta be found in the lower uterine segment, and should section be decided upon, the finger is gently withdrawn. If further placental separation has been caused by the examination haemorrhage will be at once apparent. In the event of such haemorrhage the cervix is grasped between the index and middle fingers. Very little pressure with these two fingers will be sufficient to close the cervical canal and thus check the bleeding. The cervix should be held in this manner until the operator has delivered the baby and the placenta.

A moment's consideration of the source of the haemorrhage will readily convince one that with the outlet blocked, and in the absence of active labour, bleeding must be limited to the area in which placental separation has already taken place.

Owing to the very low pressure to which the outpoured blood in the lower uterine segment is subject under such conditions, further placental separation will not be caused by the resulting haematoma. Thus a small limited haematoma will be formed similar to that found in normal third-stage placental separation.

In some of the earlier cases in which the method was employed I, in addition, pushed down the presenting part against the placenta, in the hope that by so doing the haematoma would be still further limited. This part of the technique I have now abandoned. It can be dangerous, especially in type II, III, or IV placenta praevia (Browne, 1944), in any of three ways :- (1) by increasing the pressure within the artificially controlled haematoma it may cause further placental separation; (2) it may stretch the lower uterine segment, with a similar result; and (3) it may jeopardize the life of the foetus by diminishing the placental circulation : especially may this be the case if the cord gets its insertion low in the placenta—a factor of great importance in placenta praevia to which attention has been directed by Macafee (1945).

Results

The technique above described has been in use at the National Maternity Hospital, Dublin, for two years. In the accompanying table are shown the results obtained. It will be noted that in only one case was blood transfusion necessary after examination and section. All the sections were of the lower segment.

Results of Cases of Placenta Praevia treated by Caesarean Section

Year	Cases	Mothers Lived	Infants		Blood Transfusions	
			S.B.	N.N.D.	Before Examination	After Examination
1944	20	20	0	5	0	1
1945	15	15	0	1	3	0
Total	35	35	0	6	3	1

It will be noted that the method is applicable only in cases in which the cervix has not been taken up. In my experience haemorrhage is not so likely to be provoked by examination in cases in which the cervix is taken up and the canal dilated : the placenta, if present, is usually quickly and easily recognized in such cases. However, in one such case—it was a type II placenta praevia—I did experience a rather sharp haemorrhage, which I successfully controlled in the following manner. I punctured the membranes and introduced two fingers into the uterine cavity inside the membranes ; with these fingers I pressed the separated portion of the placenta against the uterine wall, thus controlling the haemorrhage until the baby was delivered by section.

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Medical Memoranda

Varicella Herpetiformis

Ronaldson and Kelleher (*Brit. J. Child. Dis.*, 1938, **35**, 22) are of the opinion that while some cases of herpes zoster are varicellous in nature others are not. They consider that a varicellous case of herpes, being an infective condition which reproduces chickenpox in contacts, is therefore a form of chickenpox, and should not be referred to as "zoster," with or without a qualifying adjective. They suggest the term "varicella herpetiformis" for such eruptions.

Since 1894, when von Bokay first suggested a relationship between herpes zoster and varicella, there have been recorded many instances of chickenpox in one individual following herpes in another, within the ordinary incubation period of the former ailment, with no other source of infection except herpes being discovered. The "dualist" school in the herpes zoster–varicella controversy could maintain that in such instances there is no proof that the subsequent chickenpox case did not acquire the infection from an unrecognized case of chickenpox in the area. The following cases of varicella arising after contact with a case of herpes are considered worth recording because they occurred on an island in Shetland where conditions make it unlikely that any undetected cases of chickenpox could have existed.

Case 1.—In January, 1945, a woman patient was seen with a well-marked herpes on the right side of her chest. Fifteen days later her baby girl developed chickenpox, and three days after this her 5-year-old daughter also developed it. Both were undoubted cases of chickenpox.

Case 2.—In September, 1945, a schoolmistress developed herpes on the right buttock and groin, extending down the thigh. Sixteen days later her 9-year-old nephew, who lived with her, had definite chickenpox. Two weeks later other children attending the school contracted chickenpox.

Most of the inhabitants live on their own crofts and there are no groups of houses which could be called a village. The inhabitants attach an unusual importance to any case of infectious disease. The origin of any outbreak is usually obvious to all, and is often correctly traced to a particular Service man home on leave or to someone who has been elsewhere in Scotland. This can be done in a way that is possible only in an island community with a dispersed population. At the times when the two instances recorded above occurred there were no known cases of chickenpox on the island. There were two other cases of herpes in different areas of the island—one in April and one in June.

Two questions arise: (1) Whence did the cases of varicella herpetiformis acquire their infection? (2) Should every case of "shingles" be individually isolated?

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Spontaneous Rupture of the Right Quadriceps Femoris and Left Rectus Femoris in the Same Patient

A railway ticket collector aged 61 made a sudden effort to run after a passenger who had given him the wrong ticket. He stumbled, felt his knees give way, fell to the ground, and was unable to rise without assistance. When seen about three-quarters of an hour after the accident the patient complained of inability to use his right knee, as well as of pain and swelling of the joint.

On examination the right knee could not be extended; the swelling was that of a haemarthrosis and there was a definite gap just above the patella. The left knee could be extended moderately, but a gap was clearly felt at the junction of the middle and lower thirds of the thigh. A distinct bulge could be felt at the proximal end of the gap. *X*-ray examination of both knees showed marked osteoarthritis. With these findings a provisional diagnosis of spontaneous bilateral rupture of the quadriceps femoris was made.

At operation the right quadriceps femoris was found to be completely avulsed from the anterior border of the patella and there was a marked haemarthrosis. The blood was removed and the quadriceps was sutured to the patella with strong catgut. On the left side the rectus femoris was torn at the junction of the muscle with the tendon of insertion. The ends were approximated with strong catgut, using mattress sutures. Both limbs were placed on back splints, and on his return to the ward the foot of the bed was elevated.

The patient was investigated constitutionally and neurologically, but the results were all negative. The final diagnosis was therefore spontaneous avulsion of the quadriceps femoris on the right side and the rectus femoris on the left.

I wish to thank Mr. N. Cotton, honorary surgeon to the West Kent General Hospital, for permission to publish this case, and to Mr. Alan H. Todd, honorary consultant orthopaedic surgeon to the West Kent General Hospital, for his advice in writing it up.

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Cerebral Excitement following Mepacrine Therapy

That mepacrine may produce mental changes has been appreciated for many years, and its effects have been recorded by Allen *et al.* (1937) and Gaskill and Fitz-Hugh (1945). This case is of interest, however, in that it reports three separate attacks in the same individual, and these in some detail.

CASE REPORT

In December, 1945, there was admitted to the Royal Masonic Hospital a temporary serving soldier who was suffering from a frank attack of benign tertian malaria. As a curative measure he was placed on mepacrine, the dosage being 0.7 g. a day for two days and then 0.6 g. a day for seven days. Almost immediately he was seized with a feeling of extreme exhilaration and well-being. He began almost to burst with energy, running instead of walking, and

doing everything at top speed. His mind became choked with ideas, which occurred at all times of the day and night. While many of these never reached maturity, some of them resulted in the patient writing poems and creating new designs for houses and buildings. At times, too, he was seized with an uncontrollable desire to cry, and as a result would weep copiously, although inside he felt, so he said, extremely happy. On one occasion, when asked how he was, he extended his right hand to show the fine tremor which it boasted, and said: "Look; whisky fingers." As a result of these manifestations the patient's past history was gone into in some detail, and the following facts were elicited:

(1) The patient first took mepacrine in February, 1945, while serving in Assam. The dosage was but a small one (one 0.1-g. tablet per day) as the drug was being given as a prophylactic or suppressive measure. Soon after the start of this therapy he began to feel somewhat exhilarated, and his previously lethargic nature became transformed into one of extreme activity. He rose early and drove on with his work, and the days went well. About the same time as this mental metamorphosis occurred he noticed that his skin and urine were intensely yellow, as was the mucus from his nose.

(2) In August, 1945, the patient had his first true attack of malaria, for which he was treated with quinine 10 gr. (0.65 g.) t.d.s. for five days, mepacrine 0.2 g. t.d.s. for five days, and then pamaquin 0.01 g. t.d.s. for five days. During the mepacrine portion of this treatment he experienced all the manifestations of mental stimulation previously described: flights of ideas, poems, artistic designs, window-cleaning, and tears.

(3) Past Health.—This was good, the patient never having suffered from any serious illness.

(4) Family History.—So far as could be ascertained there was no evidence of any psychological disturbance in any branch or root of the patient's family tree. While it was elicited that one of his two sisters tended for a period of her life to be easily worked up, this tendency abated immediately after she had a tumour removed from her uterus, and so there is no real stigma of a psychotic disturbance.

(5) Wassermann Reaction.—This was negative, and so the possibility of lues venerea was eliminated.

After the withdrawal of the mepacrine and receiving phenobarbitone the patient's personality began slowly to revert to its normal state.

My thanks are due to Sir William MacArthur for permission to publish this case.

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Injury to the Tonsil

The literature of the last seventy years gives, so far as I could find, only one report (Rohr, 1923) of a tonsillar injury, and therefore the following case was thought to deserve publication.

On Sept. 16, 1945, a boy aged 2½ ran indoors and said he had put a "black thing" into his mouth. His mother, noticing blood in his mouth, brought him to hospital. On examination part of his right tonsil appeared to be injured, with recent blood-clot close to it. The bleeding had stopped; the child was sent home, and the mother was asked to bring him again. When seen the next day the tonsil

Diagram showing injury to tonsil.

had clearly been injured. Part of it was detached and was hanging loosely in his throat. It was considered that it might cause sudden obstruction to the air passages, and tonsillectomy was therefore advised.

At operation, on Sept. 21, the injury was found to be a vertical cut, dividing the right tonsil throughout its upper two-thirds. The anterior pillar of the fauces and the posterior wall showed abrasions. Both tonsils were removed, and the post-operative course was uneventful. The injury was probably caused by a piece of discoloured glass.

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Reviews

GENERAL MEDICINE IN 1945

The 1945 *Year Book of General Medicine.* Edited by George F. Dick, M.D., and others. (Pp. 768; illustrated. 18s.) Chicago: The Year Book Publishers; London: H. K. Lewis and Co.

The *Year Book of General Medicine* is nearly back to pre-war size with 768 pages; nevertheless it remains a handbook. It is clearly printed and well illustrated, the coloured plate this year being a representation of a skin test for haemochromatosis by means of the prussian-blue reaction. The edition for 1945 contains summaries of articles from the whole field of medicine, and the skill of the editors is shown not only by the conciseness of the writing but by the skilful selection and the pertinent and often critical postscripts. It is probably true to say that few articles written in English which make even the smallest contribution to medical knowledge are missed. Outstanding impressions from the 1945 yearbook are the increasing control of bacterial infections and the persistent failure of the attack on the viruses, leukaemia, and carcinoma. The plasma proteins are being separated into their various components for therapeutic purposes, and the literature of the human blood groups steadily grows in complexity. There is slow but steady progress in the analysis of the haemolytic anaemias. The study of cardiovascular disease is increasingly dominated by the problems of coronary sclerosis and peripheral vascular disease. The editors keep a tight rein on exponents of psychosomatic medicine, though allowing them a good run for their money; and it is perhaps a fair criticism of this popular subject that it does not lend itself to summarization and seems to be an attitude to experience rather than a means to acquiring knowledge. These yearbooks are essential works of reference and they have made themselves indispensable to medical "brains trusters." The index might therefore with advantage be made even fuller than it is at present.

BLOOD TRANSFUSION

Quelques Vérités Premières (ou soi-disant telles) sur la Transfusion Sanguine. By Arnault Tzanck and Marcel Bessis. (Pp. 66. 80 francs.) Paris: Masson et Cie.

Under the title of "Vérités Premières," which may, in view of the editorial preface, be translated as "accepted facts," Masson et Cie are publishing a series of short medical textbooks written by experts in different fields. The accepted facts are presented in the form of aphorisms in the volume dealing with blood transfusion by Dr. Arnault Tzanck and Dr. Marcel Bessis. In 66 pages the authors cover the blood groups, clinical indications for transfusion, a discussion of the "physiopathology" and treatment of shock, indications for transfusion in surgical and medical conditions, and the technique of blood administration and withdrawal.

Even in a textbook intended for students and practitioners undue simplification and dogmatism are to be deplored, more particularly in fields, like blood transfusion, where research is at present so active. There is no mention of the important developments that have taken place in diluents for stored blood, enabling it to be kept in good condition for 21 days. Sodium citrate is the only diluent advised, and even for this no quantitative figures are given. The whole important problem of Rh is dismissed in 16 aphorisms, with no indication that Rh is a complex agglutinogen producing a corresponding number of agglutinins requiring for recognition several different test sera. The use of the sternal route, which during the war has so often proved life-saving, is mentioned as of value in exceptional cases only. The importance of the application of pressure when giving a transfusion in collapsed patients is ignored.

These "accepted facts" on blood transfusion cannot be recommended to English readers.

A HANDBOOK FOR SURGICAL DRESSERS

An Introduction to Clinical Surgery. By Charles F. M. Saint, M.D., M.S., F.R.C.S., F.R.A.C.S. (Pp. 293. 25s.) Published for the Postgraduate Press by the *African Bookman*, 49, St. George's Street, Capetown, S. Africa.

One of the great surgical teachers of the last generation was Rutherford Morison of Newcastle, and his pupil Charles Saint, now professor of surgery at Capetown, has followed the traditions and precepts of his old chief. In *An Introduction*

to Clinical Surgery, with the subtitle "Surgical Wherefores and Therefores: A Reasoned Explanation of Surgical Note-taking," he has accumulated the substance of lectures given to students during their dressership. When confronted with a case the student, especially in his earlier days, needs guidance to tell him what to look for, and particularly what the real significance and relative importance of the symptoms and signs he elicits are. In this book he will find what he requires plainly laid out in both general and specific terms, so that if he absorbs the excellent teaching which is provided he will be well on the road to becoming a good diagnostician. The wide experience of the author as a surgeon and teacher enables him to write authoritatively, and his assessment of the relative values of various signs and symptoms displays a wise judgment and discretion. The book is not a textbook, and nothing, of course, is said about treatment, but in our view the author has very handsomely achieved his object of avoiding the "parrot type of acquiring knowledge" and replacing it by "a knowledge based upon and the result of reasoned thinking."

We are not among those who think that a book of this type should be a series of annotated pictures, but nevertheless a few more diagrammatic illustrations would enhance the value of a book which we regard very favourably. The student beginning his surgical studies would be well advised to acquire a copy.

A TEXTBOOK OF DISINFECTION

Disinfection and Sterilization. By Ernest C. McCulloch, D.V.M., Ph.D. Second edition, thoroughly revised. (Pp. 472; 68 engravings. 33s.) London: Henry Kimpton.

This textbook, now in a second edition, contains a vast amount of information which can nowhere else be found between a single pair of covers. Yet those who consult it may or may not find what they seek: the author quotes authorities freely, but by no means all that matter, and his treatment of some subjects is quite inadequate—the acridines, for instance, are dismissed in 23 lines. The author's clinical interests are in veterinary medicine, and he plainly does not understand some of the surgical questions with which he has had to deal (it is a small point, but "filiforms" and "bougies" are separate instruments on p. 270). The chapters describing various classes of chemical disinfectants remain much as they were, except that the synthetic detergents have appeared there; so also have the sulphonamides, though they scarcely qualify for inclusion (in connexion with them an odd misconception is betrayed in the statement, "So great are the specificities of the members of this group of drugs that even the pure powders are not self-sterilizing"). On the other hand, disinfection by steam gets much more thorough treatment: as a guide to the use of the autoclave and other methods of using heat these chapters are excellent. The disinfection of air is considered, as are water purification, sewage treatment, and the "sanitization" of crockery and dairy equipment. Pasteurization and food-canning are major subjects, and, apart from these practical matters, "antibiosis" in general, and the bactericidal action of such things as the digestive fluids, *x* rays, and supersonic vibrations, are not forgotten.

One would like to see this book expanded into at least three volumes which deal adequately with the various branches of its enormous subject, but even as it stands it will be found a useful source of information on many generally unfamiliar questions of hygiene.

TROPICAL DISEASES

Manson's Tropical Diseases. A Manual of the Diseases of Warm Climates. Edited by Philip H. Manson-Bahr, M.D., F.R.C.P. Twelfth edition. (Pp. 1,068; with 17 colour plates, 9 half-tone plates; 406 figures in the text, 6 maps, and 28 charts. 42s.) London: Cassell and Co. 1945.

A new edition of this well-known manual is an event practitioners are led to expect every five or six years. With each new edition certain improvements have been introduced, so that now the twelfth presents its readers with the greatest amount of reliable information on tropical medicine that it is possible to accommodate in a book of this size. In fact it may be stated with safety that no other book on the subject can compete with it in this respect, so that every medical man whose work lies in the field of tropical medicine can hardly consider himself equipped unless he is armed with the latest issue of *Manson's Tropical Diseases*, which has been so brilliantly edited by Sir Philip Manson-Bahr.

A number of chapters have been fully revised. This applies particularly to those on leprosy and rickettsial diseases, while much new information has been incorporated in the chapters on malaria and vitamin deficiency diseases. A very useful innovation is the introduction of a table of drugs used in the treatment of tropical diseases, giving their names and synonyms and in many cases their chemical formulae. This will be of great help to the medical man who is continually being confused by the tendency of drug firms to introduce for their own purposes names for already well-named products. A glance at such a list as the one printed here is enough to convince any unbiased person that something should be done to check this unnecessary and bewildering synonymy. There is no need to say anything more about a book that is so well known, but it remains to congratulate the editor on the successful execution of the task which he has imposed on himself for so many years.

Notes on Books

A fourth edition of *A Textbook of Surgery*, by American authors, edited by Dr. FREDERICK CHRISTOPHER, has been published by W. B. Saunders Company at 50s. Since our laudatory notice of this work when first published in 1936 we have commented favourably on each edition as it appeared. The changes in the new edition add to the value of a now well established and widely appreciated account of the practice of surgery. There are two new sections: one on military surgery by Col. E. D. Churchill, lately a surgical consultant to the American Forces in North Africa, and one on chemotherapy by Dr. John S. Lockwood of Yale, who writes on the sulphonamides and penicillin. How up-to-date is this edition may be gauged from the fact that in the excellent article on diseases of the thyroid gland by J. de J. Pemberton and S. F. Haines a well-balanced account is given of the use of the thiourea drugs in thyrotoxicosis. Dr. Christopher is now the leader of a team of over 200 members, many of whose names are surgical household words. There has been a steady increase in the number of contributors and, as might be expected therewith, an increase in size and in the number of illustrations, but the standard is maintained and is a high one, not only in the matter of the text but also in the printing, illustrations, and binding.

Ten volumes of the *Bulletin of the Health Organisation of the League of Nations* have so far appeared, and it has therefore been thought desirable to publish an index. Yet such an index might give a very incomplete picture of the work, since many documents which were issued separately or simply multigraphed would be omitted. The decision has therefore been taken to publish a complete bibliography covering not merely the period during which the *Bulletin* has appeared but the whole of the 25 years of existence of the Health Organization. The present bibliography will be useful to hygienists as a guide to the thousands of technical studies on the most varied subjects carried out under the auspices of the Health Organization of the League of Nations. At the same time it will serve as a record of the work done and as a tribute to the many collaborators from health administrations and scientific institutions throughout the world who have each contributed to that work. It is obtainable, price 6s., from Allen and Unwin Ltd., 40, Museum Street, London, W.C.1.

Dr. AGATHA H. BOWLEY is an experienced psychologist who has studied child life among many different communities and is well fitted to the task by her obvious humanitarian breadth of outlook and real love for children. Her book *The Problems of Family Life: An Environmental Study* (E. and S. Livingstone; 5s., plus 5d. postage), is based on the study of cases encountered during her work at Leicester, and statistical figures are given relating to a variety of factors in a close study of 50 cases. The experienced worker will not find much new in this little work, and no one will dispute the importance of the family environment for the future well-being of the child, but it is simply and pleasantly written so that it can with confidence be recommended for study by those who are less well instructed. Normality and abnormality in family life are both dealt with, as are relationships between teachers and parents. The infectiousness of anxiety, the establishment of bad habits in the home, and the aggressive reactions to emotional stress are explained sympathetically. Among the appendices is a useful list of suitable play material for different ages. Within its limited scope doctors, parents, and teachers will find this book a good companion, easily read, pleasantly illustrated, and clearly expressed.

The U.S. Information Service, 33, Davies Street, London, W.1, reports that the National Research Council of the U.S. Government has prepared a comprehensive index of scientific, medical, and technical books published in the United States from 1930 to 1944. Five thousand copies of the volume are being distributed to United States embassies, legations, and libraries throughout the world. All the books listed are in print and are available for distribution by the United States International Book Association, New York.

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THE SPENS REPORT

The Spens Committee, whose report is abridged in this week's *Supplement*, was appointed in February, 1945, under the following terms of reference:

"To consider, after obtaining whatever information and evidence it thinks fit, what ought to be the range of total professional income of a registered medical practitioner in any publicly organized service of general medical practice; to consider this with due regard to what have been the normal financial expectations of general medical practice in the past, and to the desirability of maintaining in the future the proper social and economic status of general medical practice and its power to attract a suitable type of recruit to the profession; and to make recommendations."

Of its nine members, eight put their names to the recommendations, while the ninth, Sir Ernest Fass, added a rider of his own. The majority recommendation is that approximately half of all general practitioners between the ages of 40 and 50 should receive annual net incomes of £1,300 or more; that about three-quarters of practitioners should receive net incomes over £1,000; that about a quarter should receive over £1,600; that slightly less than 10% should receive over £2,000; and that in a small proportion of cases it should be possible for general practitioners to obtain net incomes of at least £2,500. By net income is meant gross income less professional expenses allowed by Inland Revenue for income tax purposes. These recommendations are made in terms of the 1939 value of money, and it is to this value that all the figures and recommendations in the report refer. The Committee has also assumed that the practitioners will have to provide for themselves by insurance against early death, old age, and illness.

These recommendations mean an increase on 1939 net incomes by £200 a year for incomes between £400 and £1,200, and above this by £200, diminishing progressively to nothing at £2,000. The Committee also recommends that "before 40 and after 50 practitioners should be remunerated at the rate applicable between 40 and 50 to the burden and responsibilities of practice which they are in fact carrying." There should be a reduction of the difference between incomes of rural and urban practitioners, and remuneration under the Highlands and Islands scheme should be increased, the scheme to be applied to other sparsely populated areas. In areas which do not attract an adequate supply of practitioners additional remuneration should be offered. In practices where there is an abnormal number of aged persons and chronic invalids some adjustment in the method of payment is advised in so far as this depends on capitation. Finally it is recommended that a recently qualified practitioner on completing resident hospital appointments should obtain an initial net income of not less than £500 a year as an assistant in general practice. In this connexion the Committee suggests that about 10% of practitioners should be selected as specially suitable to train young men entering general practice as assistants after completing house appointments. A supervision fee of £100 a year in respect of such an assistant is suggested. The approved practitioner will have to provide the assistant's £500 in his first year and £600 in his second, and expenses on top of this. As it would take time to enlarge a practice to an extent which would cover this expenditure, it is suggested that the approved practitioner "who has not previously had an assistant should receive as well as the supervision fee £500 in the first year, £300 in the second, and £100 in the third year in which he had assistants." Again it should be emphasized that the Committee's recommendations are in terms of the 1939 value of money. "We leave to others," the Committee observes, "the problem of the necessary adjustment to present conditions, but we would observe in this connexion that such adjustment should have direct regard not only to estimates of the change in value of money but to the increases which have in fact taken place since 1939 in incomes in other professions."

The Committee sets forth in a table the net incomes of general practitioners in urban areas in the years 1936–7–8. This table shows that throughout the best years of a G.P.'s working life—between 40 and 55—almost 20% of urban practitioners had a net income of under £700 a year, and that over 40% had a net income of under £1,000. The Committee was unanimous that these percentages are too high, having regard to the length of training. It points out that in relation to other professions the doctor has a long training and a hard life. In 1931, for example, the mortality among doctors between the ages of 20 and 65 was 54% above that of higher civil servants and 26% above that of professional engineers. The Committee is clear that the proportion of practitioners able to reach an income of £1,300 or over is too low. Apart from any proposals for a publicly organized general medical service, it considers that unless conditions are substantially improved the social and economic status and the recruitment of general practitioners cannot in the long run be maintained. It points out that many young doctors in the past have been deterred from specialist practice by the risks and by the certainty of a number of lean years. As these deterrents will be less formidable in the future, there will be increased competition between other forms of medical practice and general practice. "We," the Committee states, "and not least our lay members, consider that it would be disastrous to the profession and to the public if general practitioners were recruited only from the less able young doctors." If, therefore, general practice is not made financially more attractive the majority of the able will seek to become specialists. Another point the Committee makes is that financial worry must inevitably prejudice the efficiency of many general practitioners. For practitioners in the age group 40–49 the Committee's recommendations can be summed up by saying that there would be only 7% receiving a net income of under £700 per annum, as against 20% before 1939; 24% receiving £1,300 to £1,600, as against 17.5%; and 16% between £1,600 and £2,000, as against 10%.

The Committee was satisfied that "there is a far greater diversity of ability and effort among general practitioners

than admits of remuneration by some single scale applicable to all." Therefore there must be a differentiation depending on ability and effort. "We are satisfied by the evidence put before us that no existing degree or qualification can usefully be made the basis of additional payment, largely because many of the qualities which make the best general practitioner are, in fact, unexaminable." Although it is not in the Committee's terms to express an opinion on the method of remuneration, it does observe that "capitation offers a method of differentiation which is acceptable to the majority of the profession." If the number of persons in a publicly organized service is 45,000,000 the Committee's proposals could be realized at the cost of 15s. 6d. per head.

The Committee feels it should justify its figures, because they are a considerable increase on the capitation payments under the N.H.I. scheme, and on the total net income of practitioners in the three years ending 1939. But the Committee was told it should not be bound to accept as satisfactory the capitation and mileage payments which existed before 1939, and that it could consider rates of remuneration *de novo*. The Committee found justified the widespread feeling among doctors that capitation and mileage payments have been too low. Evidence showed that in the case of mixed panel and private practice "the proportion of the time spent on panel patients to that spent on private patients was in general greatly in excess of the proportion of income derived from panel patients to that derived from private practice." Many witnesses stated that two-thirds of their time was spent in looking after panel patients, even though they contributed only one-third of their total income. The Committee also believes that it will not be possible to maintain recruitment in a profession with such heavy responsibilities if so high a proportion of middle-aged doctors are earning the low incomes of 1939 and before. The Committee also observes that there will be much increase of work in a publicly organized service in which the doctor is not paid per visit. It believes that it is important to improve prospects in general practice so as to make it attractive enough to prevent all the abler men from trying to enter specialist practice.

PROGRESS IN THE TREATMENT OF SYPHILIS

It is a serious criticism of the treatment of syphilis by weekly injections of neoarsphenamine that a large proportion of the patients do not complete the course, remain infected, and are a source of danger to the community. In America, where syphilis appears to be a greater problem than it is here, steps have been taken to try other methods; and, indeed, a spirit of enterprise has been displayed which has resulted in commendable progress. It is true that American enthusiasm leads to the trial of measures some of which take our breath away, but their greater grasp of the principles of drug action and the experience they gain from their trials result in notable advances.

The recent activity may be said to have begun in 1931, when Hirshfeld, Hyman, and Wanger[1] demonstrated what seems an obvious point—that the toxicity of many substances given intravenously depends on the rate at which they are put in. They spoke of "speed shock." This led to a proposal by Chargin in 1932 that neoarsphenamine should be given in syphilis by intravenous drip. In 1935 Chargin, Leifer, and Hyman[2] published 25 cases, and by 1940 there were[3] 400. These were given treatment daily for 5 days, the first 111 patients receiving neoarsphenamine, those coming after being given mapharsen, or, as we now call it, mapharside. The damage in the first group was serious; in 43 there was evidence of peripheral neuritis, and one patient died from haemorrhagic encephalitis. In those receiving mapharside, however, the outcome was much better. Even in 1945 an observer as experienced as Earle Moore[4] said that the success of the 5-day method is about as great as that attained with the usual 12–18 months' treatment in those patients who complete the long treatment, of whom about 80–85% are cured. From the point of view of the community this is a great advance, since all complete the 5-day course. From the point of view of the individual, however, the result is less good; he is exposed to a death risk of 1 in 400, as compared with a risk of 1 in 15,000 by the longer treatment. In the 1940 discussion[3] on the 5-day method Earle Moore suggested that a series of single injections given, for example, in 3 weeks might be as efficacious and less dangerous.

The Americans therefore turned to the laboratory workers. Eagle and Hogan[5] began an investigation of syphilis in rabbits. They compared the effect of twelve different treatments with mapharside, varying from the use of intravenous drip for 6 hours on one day to weekly injections for six weeks. They found that the total curative dose of mapharside was constant irrespective of the period over which the treatment was given. Whether the interval between injections varied from 2 hours to 1 week, and whether the total number was 1 or 16, the curative dose remained between 4 and 8 mg. per kg. But as the duration of treatment increased, so the maximum tolerated dose increased, and therefore the margin of safety rose. Then there was the spectacle, unusual in this country, of the laboratory workers telling the clinicians how to plan their treatment, and the clinicians in the main following their advice. Eagle and Hogan considered that any desired margin of safety could be attained by prolonging the period of treatment, and that what was needed was a compromise between an 18-month course which was "vexatious" and a 5-day course which was "dangerous." On their proposals a clinical investigation was begun, the results of which were described by Eagle.[6] The chief conclusion was that three injections per week of mapharside, each 40–60 mg. when given for 9–12 weeks, cured 82% of cases of early syphilis. Out of 4,823 patients 106 did not complete the treatment because of toxic effects, among which were 2 cases of encephalopathy. In the meantime, between April, 1943, and January, 1944, an intensive treatment of syphilis was begun in the U.S. Army in Europe, in which 775 patients received (Pillsbury *et al.*[7]) a 20-day

[1] *Arch. intern. Med.*, 1931, **47**, 259.

[2] *J. Amer. med. Ass.*, 1935, **104**, 878.
[3] *Arch. Derm. Syph.*, Chicago, 1940, **42**, 239.
[4] *Amer. J. Syph.*, 1945, **29**, 185.
[5] *Science*, 1942, **95**, 360.
[6] *J. Amer. med. Ass.*, 1944, **126**, 538.
[7] *Brit. J. vener. Dis.*, 1944, **20**, 154.

treatment in which mapharside was given in a dose of 1 mg. per kg. daily, together with 8 doses of bismuth salicylate. Of the 775 patients 746 completed the treatment, the others discontinuing because of reactions, of which fever in the second week was commonest. At the present time in the U.S.A., when treatment of early syphilis is carried out by organic arsenicals, mapharside is the substance for the most part used, and it is given either three times weekly for 9–12 weeks, or daily for 20 days. The use of neoarsphenamine has been discontinued. Confusion respecting the relative value of mapharside and neoarsphenamine has arisen in this country because some do not understand that mapharside is excreted in 2 days whereas neoarsphenamine takes from 5 to 7 days. Thus if only one injection is given per week it follows that neoarsphenamine is superior to mapharside, but if injections are given three times weekly mapharside is said by very high authority to be much superior to neoarsphenamine. This can readily be understood when it is realized that 60 mg. mapharside is the equivalent of 600 mg. neoarsphenamine.

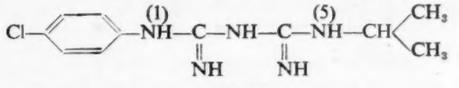
Not only in the treatment of early syphilis has knowledge been furthered: the relative value of malaria therapy and of artificial fever for neurosyphilis has been explored. In 1940 a committee reported[8] on 1,100 paretic patients treated with malaria and on 320 treated with artificial fever. The results showed that about half the mild cases had remissions, whether they were treated with malaria or with artificial fever. Of severe cases, however, only 1% had remissions after malarial therapy, while 11% had remissions after artificial fever. Attempts have also been made to apply a combination of mapharside and artificial fever to patients with neurosyphilis (Simpson, Kendell, and Rose[9]) and also to patients with early syphilis, the crowning effort being a treatment intended to effect a cure in one day. This consisted in an initial dose of bismuth salicylate (0.25 g.) and then a 10-hour period of artificial fever at 106° F. (41° C.) (rectal temperature). During the first 7 hours of the fever 0.24 g. mapharside was given by intravenous drip. None of these attempts has been rewarded by much success.

In view of this offensive spirit it is not very surprising that it was the Americans who first discovered the value of penicillin in syphilis. Mahoney, Arnold, and Harris[10] reported in 1943, and again in 1944; and later in the same year Moore, Mahoney, *et al.*[11] described results in 1,418 cases. To have secured observations on so many in so short a time represents a considerable achievement; it is in striking contrast with the poverty of the data recorded in papers from this country. High hopes were obviously placed on the excellent clinical results which penicillin quickly gave; as time has gone on expectations have diminished, and it is now certain that a combination of penicillin and mapharside is much more effective in preventing early relapses than is penicillin alone. From their observations in rabbit syphilis Selbie and Simon[12] reached the conclusion that a short course of penicillin is as good as a single dose of an arsenic compound, but that much more penicillin than arsenic is needed to produce a permanent effect, because of the more rapid excretion of the penicillin. Lloyd Jones and Maitland,[13] and more recently Lourie *et al.*,[14] have done good service by pointing out that penicillin treatment of syphilis must be organized so as not to require the patient to come into hospital. In the last paper the size of the penicillin dose had risen to 600,000 units given three times daily at hourly intervals for 5 days. We can see that the final place of penicillin in syphilis is not yet known, but it is likely to be the Americans who will find it.

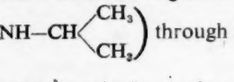
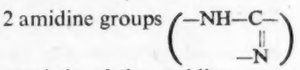
[8] *J. Amer. med. Ass.*, 1940, **115**, 677.
[9] *Brit. J. vener. Dis.*, 1941, **17**, 1.
[10] *J. Amer. med. Ass.*, 1944, **126**, 63.
[11] Ibid., 1944, **126**, 67.
[12] *Brit. J. exp. Path.*, 1944, **25**, 229.

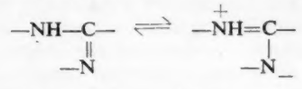
CHEMICAL CONSTITUTION OF PALUDRINE

The discovery of paludrine (M. 4888) by Rose, Curd, and Davey[15] has already been recorded in this *Journal*; a description of its evolution and of the initial experimental and clinical investigations has now been published.[16] Paludrine is N_1-*p*-chlorophenyl-N_5-isopropyl biguanide,

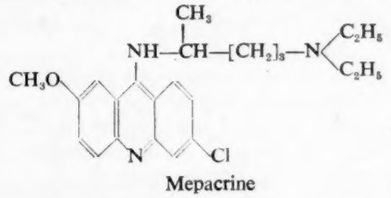


Paludrine

a chemical type not hitherto met with in chemotherapy. It owes its origin to a chain of thought which began with the earlier synthetic drugs. The molecule of paludrine reveals a benzene ring linked to an isopropylamino group  through 2 amidine groups  joined "in series." A characteristic of the amidine group is its capacity to be involved in resonance—that is, for electrons to move from one nitrogen atom to the other and back again, with a consequent displacement of electrical charge and the appropriate shift of the double bond, thus:

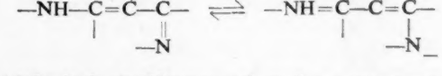


Paludrine has certain chemical features in common with mepacrine. Both are strong bases and form stable salts



Mepacrine

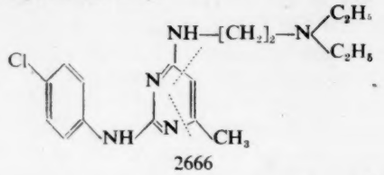
with acids; both contain a chlorine substituted benzene ring, and both carry alkyl groups attached to nitrogen (that in mepacrine being more complex). Mepacrine also has a resonance system across the middle of the molecule; not the simple amidine group that appears twice in paludrine, but an extended amidine system with an unsaturated carbon chain ( ) interposed, which still permits the drift of electrons from one nitrogen atom to the other, thus:



The biological significance of such a resonance is not apparent, although it is known to influence physical properties.

[13] *Brit. J. vener. Dis.*, 1945, **21**, 65.
[14] *Lancet*, 1945, **2**, 696.
[15] *British Medical Journal*, 1945, **2**, 653.
[16] *Ann. trop. Med. Parasitol.*, 1945, **39**, 139.

The evolution of paludrine was not as direct as this comparison of paludrine and mepacrine might imply. The first substance of the new series found active in experimental malarias was 2666. This contained the substituted benzene ring and the alkyl



2666

3349

group attached to a nitrogen atom, and close inspection shows both extended and true amidine systems. The pyrimidine ring was selected for chemical study because it provided these resonance features, and because, unlike the acridine nucleus of mepacrine, it did not normally give rise to coloured derivatives. Pyrimidine was also a "vital" ring structure, occurring in a number of important biological systems, and in view of its value in the sulphanilamide series (sulphadiazine, sulphamezathine) its use in antimalarial synthesis was timely. The compound 3349, which was a guanidine derivative of 2666, and even richer in amidine groups, was more active in experimental malarias, and was the first of the new type to show an action in human malaria. The most profitable lead from extensive research on these structures, during which more than a thousand compounds were made, came from an attempt to simplify the 2666 molecule by assuming a minimal structural requirement for antimalarial activity and omitting superfluous chemical detail. The fragment postulated as inessential is that shown within the dotted lines in the 2666 formula. The residue was then seen to resemble the arrangement of atoms found in the biguanide molecule ($NH_2—C(=NH)—NH—C(=NH)—NH_2$); the corresponding biguanide derivative was accordingly synthesized. After many more preparations highest activity was ultimately found in paludrine, in which the terminal alkyl group was simple isopropyl, in place of the more complex diethylaminoethyl group in the 2666 molecule.

INHERITED POLYPOSIS OF THE COLON

Since Luschka[1] in 1861 observed in the post-mortem room some thousands of polypoid tumours thronging the colonic mucosa of a woman aged 30, this rather uncommon and peculiar pathological echo of genetic mutation has fascinated three generations of clinicians. The pathology of inherited polyposis is well understood. In an affected colon every stage of polyp formation can be recognized, from the initial heaping and overgrowth of mucosa and multiplication of its glands, to the final tumours, pedunculated or cylindrical cystic with dilated glands. Ultimately carcinoma develops at the neck of one of these adenomas, where the cells are distorted, crushed, stunted, and ill nourished, giving the precancerous appearance which Cuthbert Dukes[2] has styled "collar catarrh." Bargen and Coffey[3] record the development of carcinoma of the colon in 82.8% of those who inherit polyposis.

The genetic peculiarities of the condition are also well documented. Polyposis is inherited as a Mendelian dominant. In most affected families it is found in every successive generation. As a rule those who transmit the disease suffer from it, though Bernstein[4] has recorded a family in which the disease skipped a generation. Polyposis may be transmitted by either sex to either sex, but its incidence is rather higher in males than in females. A curious feature of polyposis is that, though inherited, it seems never to be present at birth, in this respect resembling hereditary optic atrophy and certain forms of hereditary degeneration of the macula. The disease has been recorded in a child of 2 years (McKenney[5]), but in most cases the onset is delayed until the late teens or early twenties. That this curious delay is due not merely to a postponement of symptoms but to a real lag in the actual development of polypi was clearly shown by Lockhart-Mummery,[6] who, performing precautionary sigmoidoscopy on a member of an affected family at the age of 39, found him free from polypi, but, repeating the examination four years later, observed that polyposis had become well established in the interval.

The treatment of polyposis is now fairly standardized. Pfeiffer and Simmons Patterson,[7] and most other recent authors, advocate a combination of fulguration and colectomy. They eradicate polypi from rectum and rectosigmoid by trans-anal fulguration, short-circuit the colon by an anastomosis of ileum to rectosigmoid, and then proceed to remove the large bowel from caecum to lower sigmoid. The initial fulguration of the accessible lower colon is done in multiple stages, with an interval of not less than three days between sessions. Fulguration is not entirely without risk, for perforation and haemorrhage may occur 5 to 10 days after the operation. It is also not free from discomfort to the patient, and Buie[8] even advises that colectomy precede fulguration, so that if the operation prove fatal the patient has at least been spared the inconvenience of fulguration.

The acquired form of polyposis of the colon, which develops in 10.16% (Rankin,[9] Bargen and Coffey[3]) of cases of chronic ulcerative colitis, differs in certain pathological respects from the inherited variety. Acquired polypi tend to be limited to quite short stretches of colon—Bargen and Coffey found them disseminated throughout the whole colon in only 16.6%; they are less numerous and more varied in size and shape than inherited polypi, and in only 21.9% of cases do they proceed to carcinoma.

DELAY IN PUBLICATION OF SPECIAL JOURNALS

Subscribers have had cause to complain of the delay in publication of some of the quarterly journals published by the B.M.A., and we take this opportunity to offer an apology and an explanation. Difficulties in the paper and printing trades seem to have been more acute during the past six months than at any time during the war. One of the difficulties has been to secure delivery of the paper from the mills to the printer. And in instances in which the text paper has been delivered, publication has been held up because of the absence of cover paper. These obstacles are of no one's making, but inevitably accompany the transition from war to peace. Subscribers will eventually get their full number of issues.

1 *Virchows Arch.*, 1861, **20**, 133.
2 *Brit. J. Surg.*, 1926, **13**, 720.
3 *Surg. Gynec. Obstet.*, 1939, **69**, 136.
4 *Bull. Minn. med. Found.*, 1941, **13**, 70.
5 *J. Amer. med. Ass.*, 1936, **107**, 1871.
6 *Ann. Surg.*, 1934, **99**, 178.
7 Ibid., 1945, **122**, 606.
8 *J. Indiana S. med. Ass.*, 1937, **30**, 622.
9 *Proc. Mayo Clin.*, 1930, **5**, 118.

WHAT THE RUSSIANS EAT

BY

LYDIA FEHILY, M.D.

For the last few years the English press has resounded with the extraordinary exploits of Russian soldiers, and of the Russian people in general—exploits often carried out in a temperature of 45° below zero. Knowing the vast expanse of Russia, the appalling condition of the roads, and the lack of transport, one is inclined to ask: "What do the Russians eat that they should possess such extraordinary stamina and resistance to infection?"

Whole-grain Cereals as Staple Foods

The staple foods of the Russians are whole-grain rye and wheat bread and whole-grain buckwheat—the latter used for many purposes. The whole-grain bread is almost black and is rather coarse, but Russians like it; indeed, they prefer it to white bread, which they say tastes "like cotton-wool." Unlike other staple foods—such as white bread, maize, or polished rice—black bread, even if consumed in large quantities, does not produce any vitamin deficiency diseases. When preparing to advance, as regular food supplies could not always be relied on, Russian soldiers invariably took with them their "iron ration"—chunks of black bread—to sustain them for two or three days.

In spite of German requisitioning and the "scorched earth policy," one may be quite sure that Russian peasants hid quantities of grain—an art in which they are adept owing to past bitter experiences. Actually Russians can live on a diet of black bread alone for weeks and months, and if this diet is supplemented by berries (Russian forests are rich in these), and occasionally by milk and milk products, they can exist indefinitely. Buckwheat, also a whole-grain cereal, is used as a main dish (gruel), as a supplement to meat, as a dessert (eaten with milk or cream), to stuff poultry or meats, or to fill pies.

Animal Protein derived mainly from Milk and Milk Products

Milk and milk products play a great part in the diet of Russians; so a peasant feels secure from famine only if he possesses a cow. Even in the Soviet Republics the authorities have had to depart in this instance from the idea of communal ownership, and to allow each family to have a cow as private property. The war news reels from the U.S.S.R. often show the pathetic sight of peasants fleeing from their burning villages, the women dragging the children with one hand and leading with the other their so-called "nourisher," the cow. The guerillas, also, while living in makeshift huts in the woods, usually have a few cows tethered near by. Thus even under difficult conditions milk and milk products are made available. Although meat or fish is usually eaten with every meal, the first-class protein is derived mainly from the milk and milk products. Sour milk and sour cream are eaten in large quantities in addition to fresh milk, cream, butter, and cream cheese. Sour milk is indeed often preferred to fresh, and is eaten plain or with sugar, and is considered to be good for the digestion and also to be the best remedy for a "hangover." Cream cheese is eaten as a dessert (mixed with milk or cream and sugar), made into pancakes, or used as a filling for pastries, patties, and cakes.

Sources of Vitamins and Minerals

Undoubtedly, in Russia milk and milk products are also the main source of vitamins A and D. Before the Revolution vitamin A deficiency in the form of xerophthalmia was mainly encountered in persons who undertook repeated and prolonged fasts, during which they abstained from milk and milk products in accordance with the practice of the Greek Orthodox religion. During Lent, too, infants fed by women deficient in vitamin A often went blind as a result of keratomalacia. Therefore one may presume that vitamin A deficiency might still be found among people of the "old regime."

It is surprising that in a country where the greater part of the year is very cold, and where the children, if outdoors, are so muffled up that only the eyes are visible, rickets is uncommon. In general the bone formation of Russians is good, while white strong teeth are a national characteristic.

Vitamin B is mainly supplied by black bread and buckwheat, while an additional supply is sometimes derived from a home-made slightly fermented drink (kvass) made of stale bread, yeast, and sugar. At any rate, the deficiency of this vitamin has never been observed in Russia. Even during the sieges of Leningrad and Stalingrad, when hundreds of thousands died of starvation, the deficiency of vitamin B was not noted. This was in marked contrast to Spain, where the staple food is white bread and polished rice, and where a great number of cases of nervous and mental disorders occurred during the Civil War.

As a result of the long winters fresh fruit and vegetables are available only for a short time, and their storage also presents a problem owing to the extreme cold. In spite of this scurvy is uncommon. In winter the Russians live mainly on dried, salted, pickled, and otherwise preserved fruit and vegetables, the commonest being salted cabbage. Cabbage was the favourite vegetable in Russia long before its good vitamin C content was known to science. It, as well as other vegetables, is usually cooked so that no vitamins or minerals are wasted—i.e., either they are eaten with the water in which they were boiled (e.g., soup), or they are fried, braised, or stewed. In addition frozen cranberries are sent from tundras in the north to most parts of Russia, and their juice, which is fairly rich in vitamin C, is widely used as jellies.

The national drink of Russians, apart from vodka, is tea. Before the antiscorbutic properties of lemons were known the Russians drank their tea with lemon. As large quantities of tea are drunk in Russia, especially among the intellectuals, the amount of lemon consumed each day must be considerable. Admittedly since the beginning of the recent war the importation of lemons from abroad has ceased; but certain quantities of home-grown lemons are still available. Besides, when supplies were short or during sieges, as an antiscorbutic measure Russians took to drinking infusions made from fir and pine needles.

Thanks to the method of preparing vegetables and to the use of whole-grain cereals and milk products, there is no deficiency of calcium or other minerals.

Large Calorie Requirements

The Russian soldiers, in addition to tea and bread in the morning, get their traditional diet of cabbage soup, soup meat, buckwheat gruel, and black bread twice daily. Although the main ingredient of cabbage soup is cabbage (fresh in summer and salted in winter) all available vegetables can be added to it, but those most frequently used are beetroot, potatoes, and tomatoes (or tomato juice). As a rule, in normal times, a Russian soldier received 3,200 calories a day, not including bread, which was unrestricted and of which an average of 1 kg. per person was consumed daily. However, since the beginning of the Second World War bread was rationed and distributed according to the importance of work, a maximum of 900 g. being accorded to soldiers and heavy armament workers. As can be seen, the calorie requirements of Russians are great, owing undoubtedly to the rigorous climate. In consequence they take everything with a good deal of fat, and raw bacon is often eaten with black bread. For cooking purposes sunflower-seed oil is widely used, so that sunflowers, which are grown in almost every garden in Russia, are not only ornamental but useful. Even the cracking of sunflower seeds, a widely-indulged-in pastime, may be the response of the body to the physiological fat requirements.

Conclusion

Thus, from either instinct or experience, the Russians have chosen the most wholesome cereals, and they prepare their food in a way which conserves both vitamins and minerals as much as possible. Taking into consideration the economic and climatic conditions, it would seem that alterations in the food habits of Russians are neither necessary nor desirable. Indeed, it has been stated that the black bread of Russians has won the war for them. Although this statement is rather an exaggeration, one has to admit that the black bread helped considerably.

Of course the food referred to in this article is that consumed by the masses of Central European Russia. The populations of the extreme north and south, as well as Russian Asiatic races, have their own food habits, more suitable to their climates and their own agricultural products. Hotels and restaurants de luxe, as well as the more privileged people, use normally a modified French "cuisine," with the addition of some national dishes, such as the ubiquitous caviare.

While the King's Fund considers that the responsibility for proper provision in case of fire rests with hospital committees it is thought that notes on the prevention of fire on the lines of those first prepared for the Fund in 1907 and revised in 1926 would be of service to hospital committees in deciding whether the fire precautions at individual hospitals are adequate. A new and revised edition has now been prepared after consultation with the chief regional fire officer for the London Region of the N.F.S. The recommendations relate to the prevention of fire due to various causes, restriction of spread, access for fire-fighting purposes, fire exits, fire appliances, fire drills, method of giving the alarm and other immediate steps to be taken. The memorandum is published for King Edward's Hospital Fund for London by George Barber and Son, 23, Furnival Street, E.C.4, price 6d. post free.

MORE HOSPITAL SURVEYS

SOUTH-WEST ENGLAND; SOUTH MIDLANDS; EAST ANGLIA

The hospital services of a wide belt of Southern England, from Devon and Cornwall to the eastern counties, are the subject of three more volumes of the Hospital Survey initiated by the Ministry of Health.[1] The surveyors in the south-west area were Mr. Zachary Cope, Dr. W. J. Gill, Mr. Arthur Griffiths, and Dr. G. C. Kelly; in the Berkshire, Buckinghamshire, and Oxfordshire area, Mr. E. C. Bevers, Prof. G. E. Gask, and Prof. R. H. Parry; and in the eastern area Sir William G. Savage, Sir Claude Frankau, and Sir Basil Gibson.

BRISTOL AND THE SOUTH-WEST

The south-western area comprises the counties of Gloucestershire, Somerset, Wiltshire, Devon, and Cornwall, and the surveyors consider that the whole region should be treated as one. The regional hospital centre, the clinical capital of the service, the seat of medical training, both undergraduate and postgraduate, and the main centre of nursing training, will obviously be at Bristol. The central hospital unit at Bristol should be placed on a site ample for future development. This will mean ultimately the abandonment of the present General Hospital and the conversion of the Royal Infirmary into a casualty reception station and an auxiliary out-patient department. New hospital buildings, including a general hospital of 800 beds, a maternity hospital of 100, a children's hospital of 200, another hospital of 200 for aged and chronic cases, possibly a sanatorium accommodating 200, and possibly also the medical school, should be placed together away from the congested part of the city. A site to the south of the River Avon is tentatively suggested. It is hoped that the Royal Infirmary will find it possible to provide the area general hospital, that the Bristol Maternity Hospital will administer the new maternity centre, and that the Hospital for Sick Children will undertake the provision of the new children's hospital. Southmead Hospital, belonging to the Bristol Corporation, should be developed as a district hospital, and suggestions are made for two other district hospitals in Bristol, and others at Weston-super-Mare, Taunton, and Yeovil, and for 11 local hospitals in the Bristol area. District hospitals are defined as hospitals to be staffed and equipped to undertake a considerable range of medical and surgical practice, while the local hospitals will be available for post-operative care of cases, and for patients who, had the home conditions been reasonably satisfactory, the general practitioner would normally have treated at home. It is considered that Bristol and Taunton should be the only centres for hospitals for infectious diseases.

In Gloucestershire a scheme for an area hospital centre has already been put forward, on a site not yet selected, between Gloucester and Cheltenham, the Royal Infirmary at Gloucester and the General Hospital at Cheltenham to serve as out-patient centres, casualty reception stations, and local hospitals. In this area there is not considered to be any need for district hospitals; seven local hospitals are placed. In the Bath area the organization of a hospital centre on the Combe Park site is recommended to serve the Somerset districts already depending on Bath hospitals and all districts in Wiltshire, with district hospitals at Swindon and Salisbury and maternity centres and isolation hospitals at those two towns and in Bath itself.

For the Exeter area it is recommended that the Royal Devon and Exeter Hospital be developed to become an area hospital, with Exeter City Hospital associated for the care of incurable cases. District hospitals should be at Torquay and Barnstaple, and 16 affiliated local hospitals are suggested. Geographical considerations suggest the closing of seven other small hospitals, but it is admitted that there may be local reasons why some of them should be retained; others might conveniently become health centres. In Plymouth the best course is considered to be the development of a hospital centre with a general hospital and associated institutions all on one site. No district hospitals are thought to be needed in this area, but four local hospitals are recommended. Two alternatives are possible in West Cornwall—one that the whole of Cornwall should be included in the Plymouth area, the other that West Cornwall should form a separate area with its own centre. The surveyors favour the second course. It is recommended that a new site for a hospital centre should be found in or near Truro, and on it a general hospital of about 400 beds should be built together with special hospitals. The consulting staffs of the Royal Cornwall Infirmary and the Camborne-Redruth Miners and General Hospital should combine to form the specialist staff. A district hospital should be established at Penzance and another on the eastern side of St. Austell, and nine local hospitals are marked out.

[1] London: H.M. Stationery Office, 1945. *Hospital Survey*: South-Western Area, 10s. net; Berkshire, Buckinghamshire, and Oxfordshire, 5s. net; Eastern Area, 2s. 6d. net.

Some General Comments

The surveyors of the South-Western Area have some interesting general comments to make. They were struck by the manner in which the affairs of small voluntary hospitals are controlled in varying degrees by committees, medical staffs, and matrons.

"The inclinations and enthusiasms of the medical staffs may determine the functions of a small hospital. To refer to one example, a small hospital was opened a few years ago. One of the general practitioners in the neighbourhood was interested in obstetrics, and as a result of the needs of his patients the hospital became a maternity home. A few years later he left the district. His successor had an interest in general surgery. The maternity practice was stopped, and the hospital became filled with surgical cases. As regards one or two small hospitals it would not be incorrect to say that they had become private nursing homes supported by voluntary contributions."

Too few specialists practise in this area. The surveyors were constantly reminded of the inadequate numbers of obstetricians and gynaecologists and the difficulty of getting the help of a dermatologist. Orthopaedic surgery requires to be developed, especially in Gloucestershire. No uniform scheme of appointment of medical staffs was apparent. The committees of some hospitals appoint all medical practitioners in the locality; in others hospital appointments are in the hands of practitioners already on the staff, and it is in their power to "blackmail" any newcomer, however well qualified. In the larger hospitals the appointment of the members of the visiting medical staffs is subject to an age limit, but in the smaller hospitals the medical staffs may continue to do clinical work until they retire from medical practice. One general practitioner undertook major surgical operations until he was 80. General practitioners often defer calling in consultant help because no fees can be offered, so that patients in a general ward may have to wait for a consultant opinion until a private patient also requires the advice of a consultant in that branch. Yet there is no reluctance on the part of consultants to give their advice and operative skill without fee.

Public assistance institutions were found in which no trained nurses were employed. "Nevertheless we were impressed by the sympathy and evidence of sustained solicitude which matrons, sisters, and nurses showed towards the patients in their care." The majority of public assistance institutions have so many defects as to be unsuitable for further use for aged and chronic sick, who should be reclassified and redistributed, some of them in special units at selected local hospitals.

In the surveyors' view all the consultants should be wholly engaged in consulting work, but for several years to come it will be necessary to accept a less rigid system in certain areas. During the interim the term "consultant" should apply to the member of the visiting staff of a large general or special hospital who is recognized by his professional colleagues as a specialist in general medicine or surgery or in some branch, whether or not he is engaged in general practice.

The desire has been expressed that a medical school should be organized in connexion with University College, Exeter, or in Plymouth; but while such a scheme may be possible in future years, for the present it is considered a primary duty to see that the medical school at Bristol University is fully staffed and equipped.

OXFORD AND ITS AREA

The survey of the hospital services of Berkshire, Buckinghamshire, and Oxfordshire is illustrated by many maps and plans for an ampler provision and better distribution of hospital beds. It is considered that the hospital services for this area should be planned to meet the immediate needs of a popula-

tion of about 1,000,000—the population in 1938 was estimated at 867,000—and for this purpose a total of 9,970 beds will be needed, of which 5,000 should be for acute cases and 2,500 for chronic, 600 for maternity, 1,000 for tuberculosis, and 800 for infectious diseases. The present number of beds in the area is 5,711. The greatest deficiency is in Buckinghamshire (1,782). There is also a shortage of medical personnel, most obviously in the consultant-specialist class.

Among the general recommendations of the surveyors are the following: Fever hospitals should be called upon to deal not only with "notifiable diseases" but with such forms of acute infections as most require hospital treatment. The bulk of the public assistance institutions inspected are so bad and ill adapted for their duties that a new service in modern buildings is necessary. Children in these institutions should be separated from adults and cared for in a different environment. Chronic sick should be housed in separate blocks within the curtilage of the general hospital. Colonies under the charge of the health authority should be provided for the aged and infirm. Recommendations are also made for the better organization of out-patient departments—including an appointments system—for the provision of after-care homes for patients requiring post-hospital care or convalescence, and for many improvements in specialist services.

Health Centres Advocated

The policy of establishing health centres as the basis of the health and hospital services of the area is warmly approved by these surveyors. They recommend that existing cottage hospitals should be developed as health centres for their districts, and that other health centres should be established at Hungerford and Wokingham in Berkshire, Beaconsfield, Bletchley, Newport Pagnell, Princes Risborough, and Wolverton in Buckinghamshire, and Witney and Woodstock in Oxfordshire.

The problem of Oxford is declared to be peculiar and weighty. The city and the parts around it rely for their medical services on the Radcliffe Infirmary, which old voluntary hospital is unable to meet the growing demands. Two courses are open: one to reconstruct the Radcliffe Infirmary on its present site and build a second hospital somewhere else, and the other to evacuate the present Radcliffe site and build a new hospital of 1,000 beds about two miles from the centre of the city. In the view of the surveyors the advantages of the second of these plans are overwhelming, but in order to make it effective close co-operation between the municipal authority and the voluntary hospital will be necessary.

It is considered that Aylesbury, the county town of Buckinghamshire, should take a more important place in medical services. There is a growing need here for expansion, upgrading, and co-operation. Banbury, High Wycombe and Amersham, and Newbury should each have a hospital with a unified service and self-supporting to a considerable extent. At Maidenhead more co-ordination is required; there is a "magnificent opportunity" here for unification. Reading has two hospitals—one municipal and the other voluntary—neither of them on an adequate site; it should have one main hospital situated away from the centre of the town and a main health centre situated centrally, with subsidiary health centres or local hospitals elsewhere.

CAMBRIDGE AND EAST ANGLIA

The surveyors in this area, which includes Norfolk, Suffolk, Cambridgeshire, Huntingdon, and Soke of Peterborough, with a population of 1,250,000, are of opinion that there should be one key hospital for the whole region, fully staffed and equipped to deal with all types of cases; a principal hospital for each of the administrative areas and available for all types of service with the exception of neurosurgery and thoracic surgery and to some extent radiotherapy; county general hospitals with 100 or more beds; and, finally, local hospitals of under 100 beds, mainly staffed by general practitioners. They estimate that 3.5 beds per 1,000 are required for the acute sick, entailing an addition of 1,150 beds to those at present available. This could be made up chiefly by extensions of Addenbrooke's Hospital, Cambridge, and the principal hospitals at Peterborough, Norwich, King's Lynn, Ipswich, and Great Yarmouth. With the exception of the Norfolk and Norwich Hospital, the larger hospitals are understaffed. Apart from gynaecological and ear-nose-and-throat surgeons, there do not appear to be any consultants practising a special branch of medicine and surgery to the exclusion of general work. Radiotherapy has so far been developed only in Cambridge. There are also held to be too many hospitals of considerable size and serving large areas which have general practitioners functioning as the specialist staff.

Addenbrooke's is proposed as the key hospital of the region, and five other county general and five local hospitals are suggested for the Cambridge area. In Suffolk the principal hospital, despite its grave staffing defects, would be the East Suffolk and Ipswich, with two county general and five local hospitals in that county; and in Norfolk the principal hospital would be the Norfolk and Norwich, with four county general and seven local hospitals. Arrangements for *x*-ray and radium therapy in this region are held to require considerable organization and development. The surveyors suggest one main centre at Addenbrooke's, with full equipment, and two or three subsidiary centres at Norwich, Ipswich, and possibly Peterborough.

For the chronic sick, on the basis of 2 beds per 1,000 population, just over 1,000 beds will be needed. Taken as a whole, especially in the rural districts, the infirmaries of the public assistance institutions are "of a very low standard and are no credit to the counties concerned." An exception is made of the institution at Peterborough, "which might well serve as an example to neighbouring authorities of what can be done under present powers"; the institutions at Norwich and the county infirmary at Cambridge also do not come under the stricture. Recommendations are made for the appropriation or other rearrangement of the existing public assistance hospitals. In West Suffolk it is considered that the needs of the chronic sick could best be met by converting the Bury St. Edmunds public assistance institution into a county hospital. Detailed recommendations are also made for improvements in maternity accommodation, orthopaedic services, and sanatoria for pulmonary tuberculosis. A linkage of hospitals for infectious diseases is suggested whereby each unit over the widest possible area of administration would work in liaison with all the other units concerning admission of patients and use of staff.

ASSOCIATION OF SURGEONS

On May 7 the Association of Surgeons of Great Britain and Ireland entertained to dinner a number of eminent representatives of French and Belgian medicine, and the Directors-General of the armed Forces. The President of the Association, Sir Max Page, had a gracious tribute paid to him by Sir Claude Frankau, who described him as an outstanding example of a vanishing type of surgeon—the general surgeon. He lauded his skill as a man with equal facility in operating on congenital pyloric stenosis and on the femur. In reply Sir Max welcomed the flourishing state of the Association of Surgeons, and extended a warm greeting to their surgical colleagues from the Continent—a welcome that was endorsed in fuller detail by Sir Alfred Webb-Johnson in his toast "The Guests." Extolling the merits of professional dinners, Sir Alfred said the late Sir Buckston Browne told him that it was at a dinner that Lister had first heard of the work of Pasteur. He called upon each distinguished foreign guest present to stand up on mention of his name, and as each man did this with evident pleasure, he was warmly applauded. Ending on a solemn note, Sir Alfred said how much they had admired the patience, fortitude, and faith of the French nation during the hard years, and he thanked them for all they had done in helping our men across the frontier between France and Spain, and helping the parachutists who dropped in France on their dangerous missions. And he thanked, too, "Your wonderful women."

Prof. Leriche, who is an Honorary Fellow of the Royal College of Surgeons, graciously replied on behalf of his French and Belgian colleagues—both those present and those who had been unable to come. He went on to say how close their hearts had been to ours during these past years. He recalled hearing by radio the news that the College had been bombed. He pleaded for still closer contact between the medical professions of the two countries in the future. The young men, he observed, must exchange ideas across the Channel and read each other's literature.

Sir Alexander Hood, who also replied for the guests, spoke of the importance of morale in war and of the part played in sustaining this by the medical profession, and especially by the surgeons. No army had ever had such excellent medical services as the British

Army in this war. The surgeons had done much to plan the Army Medical Services, and he gave as an instance the great help they rendered in tackling the difficult problems of the surgical services for D-Day. Sir Alexander said that special surgery had come very much to the fore in the Army Medical Services between 1939 and 1945. The fact that the soldier knew that, if wounded, he would have first-class expert treatment in a forward area had an enormous effect on the morale of the troops. Sir Alexander paid a tribute to the consultant surgeon for "spreading the gospel of surgery," especially among the younger men. Finally he made a plea for continuing in peace the close contact there had been in war between the Army and civilian medical services. They did not want, he said, once more to go into isolation.

A HUNTERIAN DINNER

The Hunterian Society celebrated the 218th anniversary of the birth of John Hunter by a dinner that was much enjoyed by all those present. Toasting the Hunterian Society, Mr. Justice Hilberry compared his own state to that of John Hunter, who felt so apprehensive before lecturing that he used to take laudanum to soothe his nerves. Hunter, he observed, must have been a difficult man to live with because most of the rooms in his West-End house were full of anatomical specimens. Stressing the value of tradition in the learned professions, Mr. Justice Hilberry praised the Hunterian Society for its continued activity since its foundation in 1819, twenty-six years after Hunter's death. The medical profession, he concluded, was now in danger of a fracture-dislocation with its past.

In reply the president of the society, Mr. Mortimer Woolf, recalled Rudyard Kipling's classification of people into two kinds—doctors and patients. It was now proposed to subdivide the patients into those who when ill chose to lie in a bed or institution of their own choice and those who chose to lie in State.

Mr. A. E. Porritt gave a warm welcome to the guests, and mentioned that Dr. Mervyn Gordon had made a gift of Hunterian relics to the society. Responding for the guests, Lord Moran touched on a number of interesting themes. He recalled Bacon's observation that how a thing happens is more important than why it happens. Lord Moran believed that the differences between physician and surgeon were really small, and referred to Wilfred Trotter as the last of the physicians who did his own cutting. He deplored the fact that the learned professions no longer had leisure, with the result that they were ceasing to be learned. Sir Alfred Webb-Johnson, who also responded, said that Hunter's statue in Leicester Square had been damaged by rowdy soldiers. The statue had been sculpted by Woolner, who was a friend of Darwin's. Woolner, he added, had also sculpted a Puck, to whom he gave sharp projecting tubercles to the ears. Darwin called it Woolner's tubercle. Why, Sir Alfred asked, did we call it Darwin's tubercle?

CANADIAN WAR HOSPITAL FOR BRITAIN

On April 29 the Canadian Red Cross Society hospital in the grounds of Cliveden, Lord Astor's Thames-side estate, became the property of the Crown, as a gift from the Canadian Government and people to Great Britain. Col. R. W. Frost, oversea commissioner of the Canadian Red Cross, presided at the ceremony, when Lord Bennett handed the key of the main entrance of the hospital to Mr. Aneurin Bevan, Minister of Health. In the name of the Government of Canada Lieut.-Gen. J. C. Murchie handed over that part of the equipment and fittings which the Canadian Army Medical Service has added to the hospital. Mr. Bevan, acknowledging the gifts, said he was delighted to accept them on behalf of the British nation as a further example of the warm-hearted generosity of the people of Canada. The British Government intended to use it as a special hospital for research into rheumatic conditions in children, and it would also serve general hospital purposes for people in the neighbourhood. It will be known in future as the Canadian Red Cross Memorial Hospital, in honour of the Canadians who gave their lives in the war.

The Friends Ambulance Unit is a voluntary pacifist association of some 700 men and women who have organized themselves for the relief of suffering wherever it occurs. The war, and the privation and suffering which followed in its wake, took them into many parts of the world and set them a multiplicity of tasks. Though organized in the first place for wartime emergency service the F.A.U. has tried to continue its existence as long as the need for its special kind of contribution to the work of relief exists. It is assumed in the present plans that its work will come to an end by June 30, 1946. An illustrated account of work in various stricken countries is given in the sixth annual report, published from 4, Gordon Square, W.C.1.

Correspondence

The Health Service Bill

SIR,—The implications of the Health Service Bill are now available for study. Its author considers that the essential partners in the scheme—the doctors and the hospitals—must be rolled out by the smoothing-iron of Socialist uniformity. It is, in fact, the first step towards full regimentation of both doctors and patients, and, as everyone knows, it is the first step that matters. After that first step it is harder, and finally impossible, to turn back. Once Mr. Bevan has got his Bill it will be easy for him to issue regulations and use his wide powers to make doctors full-time salaried servants of the State. The public would then have to queue up at health centres like soldiers at sick parade. The public prefer the family doctor as a servant and friend; the Socialists want to turn him into a servant of the State.

In fact, we are back to the days of intolerance. In the past it was the fervour of Dissenters which made the strength of great political movements. Surely the relationship of man to man is of more importance in so personal a matter as healing of the sick than authority's need for central control. All parties and the medical profession are agreed that the aim of this great scheme should be to bring to those in need an equal chance of sharing in the modern advance of medicine, and much more success could have been assured if a proper understanding had been reached as to the limits to be drawn between the province within which the State should organize and that in which the individual should give rein to his creative genius.

If Mr. Bevan pursues his present course and enforces something on the doctors they dislike, and indeed on a large proportion of the public, then, as I indicated in a letter in September, 1945, he will create one of the greatest blunders of his career, which in due course will recoil upon the authority of the present Government.—I am, etc.,

London, W.1. NORMAN P. HENDERSON.

SIR,—Prof. W. M. Frazer's letter (April 20, p. 621) stimulates comment. He states: "Week by week in the *Journal* we see a spate of high-sounding words which bemuse rather than instruct"; very well, then, let us face facts.

The keynote of the Health Service Bill is the Minister's undisputed authority over the whole of the nation's health services. The Bill may be "most courageous," it may be "prompted by an able Minister," "who conscientiously believes. etc.," but this is no time for platitudes; this Bill means State control of the medical profession. "We are the masters"; thus speaks the Attorney-General. Very soon the Bill will be given the force of law; very soon we shall see what has happened to all the proposed amendments. "We shall know how to deal with organized opposition to the will of the people"; thus threatens one Cabinet Minister after another.

We are in for a hard fight, let there be no mistake about that. Those who are alive to the danger will agree that criticism of the B.M.A. at the present time is tantamount to high treason. however justifiable it may be at other times. The profession must be content now to repose full confidence in its leaders and give them loyal and unfaltering support. "We would now ask the community to allow us to retain a similar measure of freedom to that accorded to other professions," says Prof. Frazer. Whatever may be expected of the community, it is our bounden duty to rely on ourselves. If freedom is worth having it is worth fighting for, the choice lies between this or acquiescence in totalitarianism. The community will give its verdict in due course.—I am, etc.,

Keighley, Yorks. H. M. HOLT.

SIR,—I feel I must join other correspondents in calling for simplification and hardening of the policy of the B.M.A. The first essential is honesty of motive. The interests of the public are being safeguarded by the Government in the very introduction of a National Health Service. While being in favour

of this service, our motive is candidly to protect our own interests by fighting points in the service which are at variance with them.

There are three points on which the majority of the profession seem to differ from the Government. One is on the principle of becoming completely controlled by the State owing to compulsory surrender of goodwill and to payment by salary. The second is likely to be the total amount of remuneration to members of the profession, when this is published. The third is the loss of freedom of enterprise of the voluntary hospitals through their compulsory total acquisition by the State.

Unless these points are adjusted by negotiation between the profession and the Government what action can be taken? The proposed negative action of refusing to join the scheme is not calculated to give practitioners confidence in the speedy solution of the differences. Early concerted action by (say) refusal to sign certificates will be essential to bring the need for negotiation strongly before the Government. Unless the B.M.A. Council takes the lead with some such action most doctors will be unable to afford financially, despite the B.M.A.'s fighting fund, to lose their income and capital by refusing to join on the appropriate date whatever scheme the Government pleases to introduce.—I am, etc.,

Hove, Sussex. E. N. G. GORMAN.

SIR,—To fight with every legitimate weapon to secure amendments to the National Health Service Bill is necessary, urgent, and constitutional. To plan with fighting fund and threatening word to make an Act of Parliament of which we disapprove unworkable is revolutionary. It is no sufficient answer to claim that we are fighting for the public good. Obviously other groups displeased with other Acts of Parliament could make a similiar claim, and would be the more likely to do so since this method of bringing the law into disrepute had been blessed by so respectable a body as the B.M.A.

Surely, especially in these restless and troubled days, there is here a principle involved greater even than the Council's Principles, important as these are. Is there time to consider calmly along what road we are planning to march, what kind of forces are likely to join with us on the way, and where this revolutionary army, swollen by a multitude of recruits as it marches, and led by the Council of the B.M.A., is likely to arrive.—I am, etc.,

Nuneaton. T. H. FORREST.

SIR,—The National Health Service Bill will in due course become law, in spite of opposition by any individual doctor or group of doctors. Why? Because it is the will of the people expressed by their freely elected representatives in Parliament, to reorganize the country on urgent and truly economic grounds. Every organization and interest in these islands will in turn come up for scrutiny and ruthless reorganization. Each one of us who has the country's interest at heart must not stand in the way of progress, for it is progress. In order that this country can become great again many pre-existing ideas must be scrapped for the smooth running of the whole. I submit that the medical profession will recover from this courageous major operation and enter into an uninterrupted convalescence.—I am, etc.,

Coniston. T. W. ROTHWELL.

Assistants and the Bill

SIR,—Among the numerous letters on the effects of the proposed health service I have seen nothing about what strikes me from my own experience as one of its most important deficiencies—the abolishing of the status of assistant. Before entering general practice I had longer than most in resident hospital posts, but I should be the first to admit that what I learned from my principal when I was an assistant was a most important part of my training, which I should have sadly missed had I set up on my own account.

I have tried in vain to see how under the proposed scheme the newcomer to practice can be "introduced" unless he is attached in some subordinate capacity to an older hand. With a capitation basis it might be obligatory for a doctor, on reaching an agreed limit of numbers, to employ an assistant; but where salary is the basis, and each doctor is responsible only to a committee, there can be no smooth and natural succession from the older doctor to the younger, nor can there be the gradual slackening off of a tiring old man, which is the present general method.

This has seemed to me from the beginning the strongest argument for the retention of the private ownership of practices. Both the patients and the succeeding doctor must suffer from the sudden disruption of practices which seems inevitable under the proposed scheme.—I am, etc.,

Sherborne. R. MCINTOSH.

Penicillin and Diphtheria

SIR,—Your annotation on the action of penicillin in diphtheria (April 27, p. 656) is based solely on the experimental findings of Ercoli, Lewis, and Moench (*J. Pharmacol.*, 1945, **84**, 120) and disregards those of R. M. Young and G. M. Mood (*J. Bact.*, 1945, **56**, 205) which seriously conflict with them. You quote the former as stating that a concentration of over 1 unit per ml. of penicillin is required to inhibit the growth of *C. diphtheriae*; Young and Mood tested six strains and found all to be inhibited by concentrations between 0.004 and 0.06 unit per ml. (This is comparable with my own findings in thirty strains, mostly gravis.) They also found that experimental infection by *C. diphtheriae* in guinea-pigs could be prevented by extremely small amounts of penicillin mixed with the inoculum, or cured by larger doses given as long as 23 hours after inoculation with a larger dose of culture.

The effect on the results of such experiments of the routes of inoculation and other factors appears to need further study, but I submit that to base a definitive judgment solely on the findings you quote is unjustified. Your conclusion that penicillin "would have no appreciable value for the treatment of patients with established diphtheria" is premature and unsupported by my own experience, as described in the letter which you published on April 20 (p. 627). It could have been confidently predicted without the experiment you quote on this point that penicillin would not influence the action of diphtheria toxin. On the other hand, if administered in sufficient dosage to inhibit the growth of bacilli in the lesion it will prevent the formation and absorption of further toxin, and it is reasonable to suppose that this should have a further influence on the course of the disease.

My experience, which now extends to five cases, combined with my observations on the fate of penicillin-sensitive organisms in deep gum and tonsillar infections treated with general penicillin, leads me to believe that large doses—at least 500,000 units a day—are necessary to ensure penetration into the membrane, whether from the circulation or via the saliva. The effect is rapid and treatment need only be continued for three days.—I am, etc.,

St. Albans. DAVID A. LONG, Penicillin Officer, Hill End Hospital.

Unusual Reaction to Penicillin

SIR,—In penicillin-treated syphilis a febrile reaction, occurring within twenty-four hours (or more exceptionally after ten to twelve days) of commencing treatment and frequently associated with exacerbations of clinical manifestations of the disease, is commonplace, and its incidence has been variously reported as from 10 to 50%. The chief practical application of this lies in the fact that the flare-up of an advanced syphilitic lesion in a vital organ or tissue may have disastrous, and even fatal, consequences. The phenomenon is of the nature of a Jarisch-Herxheimer reaction, and is familiar to all venereologists.

Capt. M. Swerdlow (April 27, p. 664) has doubtless excluded the possibility that his patient was suffering from coexisting syphilis when treatment for gonorrhoea commenced, and may have omitted to mention this on the grounds that it was routine procedure. I cannot shed any further light on his case, but his letter may serve as a useful reminder to those with a limited experience of the use of penicillin in venereal diseases. As increasing supplies of penicillin become available to non-specialist practitioners, doubtless more and more cases of gonorrhoea will be treated with this powerful therapeutic agent by

doctors with limited experience of its use in V.D. The two chief lessons to be learned derive from the fact that both the gonococcus and the *Treponema pallidum* are penicillin-sensitive organisms. Therefore: (1) Before exhibiting penicillin in a case of gonorrhoea (or, indeed, in any general medical or surgical condition) the practitioner should bear in mind the possibility of coexisting syphilis, particularly with clinically active lesions in vital tissues—e.g., cardiovascular and central nervous systems. (2) The clinical and serological surveillance of penicillin-treated gonorrhoea, to exclude syphilis contracted at the same time and masked by penicillin because of its longer incubation period, must be systematic, thorough, and prolonged. In cases of doubt arising out of either or both of these conditions the advice of an experienced venereologist should be sought.—I am, etc.,

Inverkeithing, Fife. RICHARD SCOTT.

The "Intractable" Vesico-vaginal Fistula

SIR,—Dr. Donald Mackay's interesting report of the spontaneous closure of a large vesico-vaginal fistula (April 27, p. 650) is a useful reminder that this injury, so often regarded as intractable, is in fact possessed of a strong tendency to spontaneous cure. This is particularly so when the fistula is the result of the *tearing* of otherwise healthy tissue rather than the *loss* of tissue by necrosis. The first type behaves in this respect like the deliberate vaginal cystotomy which was much used by a previous generation of gynaecologists, and which invariably closed, it seems, within a few days. In several cases in which I have resorted to vaginal cystotomy spontaneous cure has always quickly occurred without the need for suturing. Dr. Mackay's case is specially interesting inasmuch as the closure took place without the help of urethral drainage, which is, of course, indicated after cystotomy.

Dr. Mackay comments on the difficulty of exposure of the fistula. This difficulty may be very great, but is, in most cases, overcome by the use of a generous episiotomy and the adoption of the knee–chest position as recommended by Sims in his pioneer work. I have found Grey Turner's modification most helpful. The anaesthetized patient is rolled on her face, is drawn by her legs to the bottom of the table, the legs flexed at the hips, and the knees placed on, and bandaged to, a low stool: the table is then lowered until the pubic region is just clear of the top. Whereas the true knee–chest position is difficult to maintain, this modified position can be kept up without difficulty for long periods.

I deplore the pessimistic impression conveyed in Dr. Mackay's report regarding the curability of vesico-vaginal fistulae, and the implication that transplantation of the ureters is an operation frequently required. Mahfouz Pasha,[1] with experience of more than 400 cases—many of a very severe variety—reports a cure rate of 95% in the last 100 cases. Writing of the abdominal and transvesical approach he says: "For the last eight years I have not resorted to any of these abdominal operations; I find the vaginal route safer, and if I fail to close the fistula by the vaginal route I seldom succeed to do so by the abdominal." In my own much smaller experience of 30 vesico-vaginal fistulae it has been possible in all of them to repair the fistula by the vaginal approach alone, using, for the most part, a simple Sims's type operation (one patient is still under treatment with every prospect of cure). Most of these were cases of long-standing incontinence—one as much as 32 years—and most of the patients had had multiple previous operations, many by the abdominal or transvesical route. In view of this satisfactory experience with the vaginal operation I disagree with the pessimism so often expressed regarding the treatment of this injury. The most difficult case is that in which there has been an extensive loss of tissue at the vesico-urethral junction; in it a perfect anatomical repair may be marred by a subsequent severe stress incontinence of urine. In these cases relief may sometimes be obtained by the use of a pessary to press on the urethra, or, more certainly, by the use of the Aldridge fascial-sling operation.[2]—I am, etc.,

Nuffield Department of Obstetrics and Gynaecology, Oxford. CHASSAR MOIR.

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2 Moir, J. C. (1945). *Proc. roy. Soc. Med.*, **33**, 675.

Iritis in the Rheumatic Affections

SIR,—Prof. Arnold Sorsby and Dr. A. Gormaz (April 20, p. 597) wrote an interesting paper on iritis in the rheumatic affections. They made the important observation that iritis occurs in some 5% of cases of rheumatoid arthritis, and again drew attention to the incidence of iritis in ankylosing spondylitis. The rest of their paper, however, only serves to show how completely meaningless are the terms "rheumatism" and "rheumatic." They investigated the incidence of iritis in rheumatoid arthritis, acute and subacute rheumatic fever, Still's disease, fibrositis, osteoarthritis, ankylosing spondylitis, gout, and sciatica. Rheumatoid arthritis, Still's disease, and ankylosing spondylitis are no doubt closely related to each other from the point of view both of aetiology and of pathology, but there is no satisfactory proof that they are in any way related to acute and subacute rheumatic fever. Though both groups of conditions may have an infective origin, this has not been proved.

Osteoarthritis is a degenerative condition, and is often a misnomer in that what is called osteoarthritis is commonly no more than the presence of osteophytes quite unrelated to joints. Although gout may sometimes give rise to diagnostic difficulty, there is nothing to suggest that its causative factors are in any way related to those of the other conditions under discussion. Similarly, sciatica has nothing whatever to do with any of these conditions. It is, therefore, not surprising that they found no significant incidence of iritis in osteoarthritis, gout, or sciatica. Indeed, the only feature common to all these conditions is pain, and on this basis "rheumatism" might just as well embrace such unallied conditions as trigeminal neuralgia, tabes dorsalis, or angina pectoris. Nor is the absence of iritis in "fibrositis" unexpected. This latter must surely be the biggest diagnostic rubbish heap in current medicine; the last three cases bearing this label that have come to my notice have respectively been chronic empyema, lobar pneumonia, and metastatic carcinoma of the spine, though the bulk of cases so labelled are, in fact, examples of psychogenic pain. I have long felt that the terms "rheumatism" and "rheumatic" are so devoid of meaning that they should be expunged from the medical vocabulary or limited to acute and subacute rheumatism or rheumatic fever.—I am, etc.,

Leeds. HUGH G. GARLAND.

Sjögren's Syndrome with Rheumatoid Arthritis

SIR,—Dr. F. Parkes Weber in his letter (May 4, p. 700) questions whether anyone in this country has seen rheumatoid arthritis in patients suffering from Sjögren's syndrome. If he will be good enough to come round here I can show him several such patients, including one now receiving in-patient treatment. Far from being a curiosity in Sjögren's syndrome, rheumatoid arthritis is an essential feature of the condition, and I hesitate to diagnose keratoconjunctivitis sicca unless the patient shows evidence of rheumatoid arthritis.—I am, etc.,

Royal Eye Hospital, London, S.E.1. ARNOLD SORSBY.

Partial Deafness of the Elderly

SIR,—Now that I have myself become a victim of this very common form of deafness I realize that the public (and most doctors) are unaware of its peculiarities. If these were widely comprehended, a little considerateness would enable speakers—in public, in private, and on the wireless—to become intelligible to thousands of these elderly unfortunates. The remedy usually applied is to shout. This is not only unnecessary (except in advanced cases) but is resented as calling attention to their infirmity. No, the main defect is a blurring of the words together when people talk too quickly or indistinctly; also if two people talk at once or if there is another noise, such as a passing aeroplane.

The defect seems to me analogous to an old piano in which the dampers have become worn so that the notes run together if played too loud or quickly. Hence, in conversing with one of these unfortunates, it is considerate and polite to face him, so that he can see the movement of your lips, and to speak more distinctly and deliberately than is customary with most people, especially the young. For this and more important reasons, children should be taught not to speak in a slovenly

manner. Speech is an intricate and important cerebral activity executed by countless nerve cells which need educating (as in Scotland). Slovenly speaking means a slovenly brain.

On the wireless (relayed) most of the announcers are unintelligible to me because they talk too fast—or, provokingly, one may hear all the sentence except the end, when the voice is dropped. (This breaks one of the first rules in public speaking.) I can hear every word of a deliberate speaker like Mr. Churchill. The Brains Trust transmission is always inaudible to me owing to blurring and booming. I listened once to a fine wireless set provided with a "sharpener." When this device was connected I could hear every word.

With the stethoscope I can hear the faintest heart murmurs as well as any of my house-physicians. For years I have tested the merits of a stethoscope by applying it to the ball of my thumb. Contractions of its adductor muscle produce a sound of constant intensity which I hear as well as ever. I still prefer my old stethoscope because it has two bells, either of which can be twisted into position: (1) a 1¼-in. (3 cm.) diaphragm for the lungs and faint aortic leaks; (2) a bell with rubber rim for mitral murmurs, emaciated patients, and blood-pressure measurements.

I can hear the slight sound of a cigarette extinguished in water, yet in conversation or on the telephone I often have to say: "Please repeat more slowly." High notes, including the telephone bell, are badly heard. I describe my own experiences because they must be typical of thousands of miscomprehended mortals. I withhold my name chiefly because I hope the public press will broadcast some of these hints.—I am, etc.,

"M.D."

Ocular Signs of Vitamin Deficiency

SIR,—In your issue of April 6 (p. 546) Dr. R. E. Wright questions the validity of the statement, made in an annotation on "Ocular Signs of Ariboflavinosis" (Dec. 22, p. 889), that corneal vascularization "has been noted as a result of vitamin-A deficiency." This statement was made to stress the non-specificity of corneal vascularization as a pathognomonic sign of ariboflavinosis. Although it may occur in riboflavin-deficient subjects, it is seen in a variety of conditions such as vitamin-A deficiency, tryptophane deficiency, injury to the corneal epithelium by irritants, diseases causing pannus, such as trachoma, phlyctenular keratitis, and any superficial keratitis.

Corneal vascularization as an early sign of vitamin-A deficiency was described by Wolbach and Howe (*J. exp. Med.*, 1925, **42**, 753) and by Bessey and Wolbach (*J. exp. Med.*, 1939, **69**, 1). Keratinization occurs first and then corneal vascularization, which is indistinguishable from that of riboflavin deficiency. It is a very early change, and it is possible that native patients in the East are seen only when their eyes are badly affected, when any corneal changes have progressed, and the eye has frequently become secondarily infected.

Dr. Wright hopes that we are nearing the time when vitamin deficiencies will be confirmed in the laboratory. Unfortunately the laboratory diagnosis of avitaminosis has many pitfalls. Authorities are not agreed on normal standards for vitamin levels in the body fluids; different techniques give different results; individuals vary widely in their daily requirements and in their absorption, storage, and excretion of the vitamins; and some vitamins can be synthesized by bacterial action in the human gut and are possibly absorbed. Also, vitamin deficiencies are multiple and very rarely single, unless produced artificially or by special diets. These are some of the complications encountered. There are many others.—I am, etc.,

YOUR ANNOTATOR.

Smallpox in the Vaccinated

SIR,—Infant vaccination may modify the disease for very many years. A soldier returning from India has recently introduced smallpox into Essex and infant vaccination protected many adults. The unvaccinated died. The cases may be divided thus:

	Cases	Deaths
Successfully vaccinated in infancy and successfully revaccinated	3	–
Successfully vaccinated in infancy only	7	2
Unvaccinated in infancy but vaccinated as contacts	2	–
Unvaccinated or vaccinated too late to modify the disease	2	2

Three of the cases vaccinated in infancy only were aged 54, 59, and 69, respectively. If the population had been completely unvaccinated, numerous contacts with the original soldier, a highly modified case, would have contracted virulent smallpox. As it was, infant vaccination protected many persons completely and modified the disease in the few that developed it before they were revaccinated. Does Dr. Killick Millard (April 20, p. 625) consider that this protection from the undiscovered, highly modified but infectious case is not worth having?—I am, etc.,

W. F. CORFIELD,
Medical Officer of Health.

Colchester.

Medical Supplies on Merchant Ships

SIR,—The letter by Dr. J. S. Hall (March 30, p. 504) criticized the medical equipment of merchant ships but unfortunately did not go far in suggesting improvements.

The first (and false) impression is that the medicines supplied are childishly inadequate; this arises because the casual medical visitor is faced by an array of bottles labelled "stomach mixture—good for indigestion," "sweating mixture," and so on, with directions given in the simplest language. A study of the standard prescriptions in the scale of stores in the appropriate part of the *Shipmaster's Handbook* will reveal that these are stock medicines comparable to *N.H.I. Formulary* preparations. It is quite true that NaCl and glucose is a more rational remedy than the carminative "fireman's cramp mixture" and, no doubt, the V.D. clinics would prefer the undiagnosed penile lesion to be dressed with simple saline rather than "black wash." Sulphathiazole is already provided, but acriflavine could oust the traditional iodine with advantage, especially in ships carrying native crews, who may neglect abrasions rather than attend for an unnecessarily painful dressing. These items might well be brought up to date at the next revision of the *Shipmaster's Handbook*.

In my opinion the big defect in treatment in foreign-trade ships is that too little can be done for complicated cases of malaria, especially cerebral malaria. It must not be forgotten that malaria is one of the common occupational diseases of seamen. Many cerebral cases are missed because malaria is never suspected. Any man suffering from coma with pyrexia, even if he collapses in an overheated stokehold or engine-room in the Tropics, should be treated as a case of cerebral malaria unless a clear alternative diagnosis is indicated. With the exception of ships bound south through the Red Sea direct from North European or U.S.A. ports it may be argued that in any region where the crew are exposed to extremes of heat they have also been exposed to malaria. Specific treatment apart, the handling of cerebral malaria and heatstroke is reduced to palliative nursing, and by regarding all coma–fever cases as cerebral malaria to be treated with quinine by injection an occasional heatstroke may receive a (to him) harmless and unnecessary dose of quinine, while it is made certain that no malaria case misses this life-saving procedure.

In general such injections by laymen should be intramuscular, though many officers are prepared to put a needle in a vein. The equipment provided could be ampoules and syringes or a specially developed "tubonic" ampoule or a syringe with cartridge loading. (In connexion with this it is inevitable that penicillin will be included in the list of medical stores, and its reconstitution with distilled water or the repeated use of a rubbed-capped bottle has drawbacks in lay hands which might be avoided by the use of expendible cartridges.) The provision of such antimalarial facilities in the early days of the war would have saved many lives in ships touching at West African ports.

While on the subject of injections I should like to evoke the opinion of medical officers of the various fishing organizations on the following. I have not been to sea in a steam trawler since my student days, but I well remember having to exercise my professional talents even then. The number of fractures sustained in handling the heavy gear in winter-time is considerable. The shock experts may well consider what to do with a trawlerman with a fractured femur put up with the first-aid equivalent of a "long Liston" and lying in a springless bunk which moves every way as the vessel steams, often for several days, to get him into port and a hospital bed. In my opinion no trawler should put to sea without a dozen "tubonic" ampoules of morphine and a tube of 1/2-grain (32 mg.) morphine tablets for oral administration. Simple instructions are easily carried out, and a rule of an injection at the time of the

accident with another in an hour if the pain persists, followed by a tablet by mouth to be given whenever the patient is fully conscious and the pain is coming back, could only be beneficial and would save much unnecessary suffering.

As orthopaedic fashions and the treatment of burns change so rapidly it is difficult to see what alterations are acceptable to the experts. It is sufficient to say this. Let the reformer go slowly. The shipmaster or chief steward has little time to keep up with a constantly changing scale of medical stores, and it is better that he should have a small stock of sound and essential remedies and appliances which he understands and can handle with confidence. The wartime American scheme of training chief stewards up to pharmacist's mate (sick-berth petty officer) standard has much to recommend it, but until a similar scheme is introduced into the Merchant Navy the medical equipment cannot be increased to any great extent with any guarantee of efficient use.—I am, etc.,

W. S. PARKER,
Surgeon, M.N.

London, W.11.

Diuresis by Suggestion

SIR,—Mr. A. Basil Rooke's interesting observation of this phenomenon (April 13, p. 589) reminds me of a case I saw some years ago, in which similar observations were made.

In June, 1940, at a Northern Emergency Hospital, a man of 35, wounded in the evacuation of Dunkirk, was admitted with a shrapnel wound in the left posterior renal area, which had resulted in a urinary fistula. We were able, with the aid of intravenous pyelography, to locate the shrapnel at the upper extremity of the left ureter, where the opaque material could be seen escaping through the opening (see A.P. view).

It was not possible at once to remove the foreign body, so that for a week or two one was able to observe the fistula. (It is noteworthy that the shrapnel fragment worked its way slowly along the sinus and was ultimately easily removed near the surface.) During the period of observation it was found that, on inclining the patient to the left, urine was seen to drip at regular intervals from his fistula, so that a rough idea of the rate of excretion could be obtained. I was able in this way to test the effects of various stimulants, both mental and physical, on the excretory rate. I found, like Mr. Rooke, that the mere mention of pleasant drinks and foods was followed, after a short "lag" period, by a definite measurable increase in the rate of flow.

This phenomenon reminds one irresistibly of the valuable observations of Wolf and Wolff (*Human Gastric Function*, Oxford University Press, 1944) on the response of the stomach in terms of vascularity, secretion, and motility to the mere discussion of delectable dishes, without the sight, taste, or smell of food. These observations were made on a patient with a large gastrostomy, the opening of which was surrounded by a protruding collar of prolapsed mucosa. When discussion of appetizing food was begun the membrane became redder (from 40 to 70% according to their scale of designation), indicating a marked increased mucosal vascularity, and the output of parietal (oxyntic) cells was increased proportionately. Actually tasting the food added little to these effects. Earlier authors describing this psychic secretion were Beaumont, 1833; Lonqvist, 1906; Pavlov, 1910; and Mantelli, 1911. Also, it is interesting in this respect to recall the work of Babkin, who showed that mankind's favourite hot drinks (i.e., tea, coffee, and cocoa) are excellent stimulants of secretion.

In the case of the stomach the nerves responsible for vasodilatation are the vagi, which are, of course, readily influenced by the cerebral cortex and hypothalamus. The renal plexus, from which the kidney derives its autonomic nervous supply, is formed by filaments from the coeliac plexus, the aorticorenal ganglion, and the aortic plexus. It is also joined (according to Renner) by the lowest splanchnic nerve and by branches from the vagus, these being mainly vasomotor in function. It is therefore quite conceivable that, in parallel with parasympathetic activity in the stomach and elsewhere, dilatation of the renal capillaries with activation of "quiescent" glomeruli should occur in response to a suggestion of some pleasant food, with consequent relative diuresis.—I am, etc.,

MANUEL ANDERSON.

Queen Elizabeth Hospital, Gateshead.

"Congenital Malaria"

SIR,—Recent correspondence on "congenital malaria" prompts me to add the following observations on the subject.

In the course of a malaria survey in East Africa before the war I examined 143 blood smears from newborn African infants and found 11 infants showing typical *P. falciparum* parasites; but none of those 11 infants developed clinical malaria in the first week of life. The only figures I now have available refer to the first 54 trials, which yielded the following results in smears from the sites given:

Umbilical Cord		Child's Heel		Placenta	
P. falciparum	5	*P. falciparum*	7	*P. falciparum*	4
P. malariae	1	*P. vivax*	1	*P. malariae*	2

Thick and thin films were prepared and stained by the "Shute method," using buffered distilled water and acetone-free alcohol. Special precautions were taken against carrying over parasites from the mother's blood when making the film from the child's heel.—I am, etc.,

R. MACKAY.

Preston.

SIR,—Dr. J. S. English (May 4, p. 701) perpetuates the fallacy of previous reporters on this subject in ignoring the possibility that a malarial infant 6 days old or thereabouts could have acquired the infection post partum. He says that in his case "the malaria was transmitted before birth"—i.e., congenital—and expresses surprise "that there are not more cases on record." My submission, as suggested in my previous letter (April 13, p. 586), is that there are in fact no proved cases on record. As a student more than ordinarily desirous of enlightenment on this difficult subject, and echoing, as I imagine, the desires of many other students and practitioners of tropical medicine, I suggest that information from an acknowledged authority as to the absolute criteria required to support a diagnosis of congenital malaria would be welcome.—I am, etc.,

"STUDENT NO. 2."

Alien Doctors in Britain

SIR,—In the near future a number of medical men will be released from the Forces whose position presents an urgent problem. I am referring to the doctors of Allied and friendly alien nationality who served during the war in H.M. Forces and who, for various reasons, cannot return to their countries. As things are at present, on demobilization they are automatically debarred from practising their profession here because most of them do not possess British qualifications. In order to obtain these it is necessary to sit for examinations after studying at a recognized medical school for periods ranging up to three years; in practice it may be much longer, as medical schools are reluctant to admit these doctors as students in view of the shortage of accommodation.

For the majority it is impossible to comply with these conditions—mainly for financial reasons. They are, therefore, left stranded. Surely these men to whom we entrusted the care of our fighting men should be given some consideration, and some effort should be made to modify the very stringent regulations, facilitating their admission to the *Medical Register*.—I am, etc.,

E. M. HERBERT.

London, W.1

Hospitals and nursing homes may now have "dunlopillo" mattresses and pillows, as may invalids against medical certificates for use in their own homes. The Board of Trade has issued a licence to the manufacturers for a limited number to be supplied over the next six months.

Obituary

SIMON FLEXNER, M.D., LL.D., D.Sc.

Dr. Simon Flexner, as already announced, died in New York on May 2 aged 83. One of the leading bacteriologists of his time he was director of the Rockefeller Institute for Medical Research from 1903 to 1935, when the title of emeritus director was conferred upon him. During a lifetime of patient and illuminating research he distinguished himself especially by his work on terminal infections, his experimental studies on venoms, on the aetiology and treatment of cerebrospinal meningitis, and acute anterior poliomyelitis. His name is indelibly associated with Flexner's dysentery bacillus and Flexner's antimeningococcus serum.

Born at Louisville, Kentucky, on March 25, 1863, he graduated M.D. of the University of Louisville in 1889; he then became a postgraduate student at Johns Hopkins University, Baltimore, and attended clinics on the Continent of Europe, at Strasbourg, Prague, and Berlin, and later at the Pasteur Institute, Paris. He was professor of pathological anatomy at Johns Hopkins in 1898–9, and of pathology at the University of Pennsylvania, Philadelphia, 1899–1903, during which time he was also director of the Ayer clinical laboratory at the Pennsylvania Hospital. Simon Flexner began his long service with the Rockefeller Trust in 1903, when he moved to New York to take charge of its pathological laboratories which had been opened two years earlier; many of the researches carried out there by him and his staff have become part of the history of bacteriology, immunology, and experimental epidemiology. Recognition of his work came from almost every civilized country; he received honorary doctorates from many universities in America and Europe and distinctions from other learned bodies. He was elected a Foreign Member of the Royal Society in 1919, and four years later the French Government advanced him to the rank of Commander of the Legion of Honour. He had been Huxley lecturer at Charing Cross Hospital Medical School, and in 1937–8 was Eastman visiting professor at Balliol College, Oxford, which elected him to an Honorary Fellowship. The British Medical Association made him a Foreign Corresponding Member in 1932. In his own country he had been a trustee of Johns Hopkins University, of the Carnegie Institute of Washington, and of the Rockefeller Foundation; chairman of the Fellowship Board of the National Research Council, and of the Public Health Council of New York State; and assistant surgeon-general in the U.S. Public Health Service Reserve. Besides contributing many important papers and monographs on pathological and bacteriological subjects he wrote in 1941 with his kinsman James Thomas Flexner a book entitled *William Henry Welch and the Heroic Age of Medicine*. His youngest brother, Dr. Abraham Flexner, the educationist, is well known for his reports and books on medical education in the United States and Canada and in Europe.

SIR HAROLD STILES

Dr. EDWIN BRAMWELL writes:

As a great admirer, and one who had many intimate contacts with him during the later years of his professional activity, I would like to add something to what has been written of Sir Harold Stiles. His reputation as a brilliant anatomist and one of the leading surgeons of his day is well known; but he had a combination of additional exceptional faculties, some of which, I would emphasize, made him an outstanding figure in the profession which he adorned. Gifted with a great charm of manner, he possessed to a most unusual degree the psychological insight which enables "the healer" to see a case from the patient's point of view. Very thorough in everything he did, it was a pleasure to be asked to see a case with Stiles, for he always knew exactly the information he required and was most appreciative in acknowledging any help he might receive. Keenly interested in anything which was new to him, particularly if it had a practical application, he had a thirst for pertinent knowledge. My impression is that satiation with everyday procedures, which demand so much expenditure of time and physical energy in the life of the busy surgeon, may have precipitated his retirement. A most stimulating teacher and demonstrator, Stiles had a brain which never seemed to tire. It was soon after the first Great War that Harvey Cushing, who was staying the night with him, told me of the day they had just spent together at the Edinburgh War Hospital at Bangour. From ten o'clock to six, with brief intervals for lunch and an afternoon cup of tea, Stiles had continued to demonstrate cases—he was not operating—and, said Cushing, he was as enthusiastic, brilliant, and interesting at the close of the day as he had been at the beginning, "the most remarkable instance of mental endurance with which I have ever met."

When I dined alone with Stiles at his house at Great Stuart Street a few days before he left Edinburgh to live at Gullane, I asked him how he proposed to spend his time. He told me that, now that he had given up surgery, he intended to make a serious study of golf and had bought all the leading books upon the game. It was obvious that this would never satisfy his active mind, and I was not surprised to hear soon afterwards that he was concentrating upon geology. Some two years later when I asked him whether he proposed to contribute to the literature of geology his reply was: "Although I have worked harder at the subject during the past two years than I did at medicine during any two years of my undergraduate course, I realize that I have only grasped the rudiments." Stiles recognized his limitations; this indeed was one of his many characteristics. Yes, Stiles was a remarkable man, for, in addition to his prowess as a surgeon, he had the mental aptitude, insatiable scientific curiosity, and urge of the investigator, combined with a wonderful power of concentration. He loved new knowledge for its own sake, for the problems which it raised and the mental satisfaction which their solution afforded his ever-active brain.

Prof. GREY TURNER sends the following appreciation:

It must be over forty-five years ago since Harold Stiles became an inspiration to the younger men working in surgery in Newcastle-upon-Tyne. His name was already prominent in cancer research and especially in connexion with the breast, but we also heard that he was rapidly becoming the leading surgeon in Edinburgh. Stiles had a thorough training in the basic subjects, especially anatomy and pathology, and in after-years he always regarded such studies as of great importance as an introduction to the practice of surgery. I remember him stressing the fact that for the first ten years of his professional life he never touched a knife other than in the dissecting room. He was always a most persevering and industrious worker. His approach to surgical problems was largely anatomical, as might indeed have been expected from one who had been trained in anatomy under so great a master as Sir William Turner and in its application when he served as house-surgeon to Prof. John Chiene. To the end of his days he kept up this subject, and long after his retirement he expounded the anatomical basis for certain interventions which we were discussing. It was applied anatomy that made the greatest appeal, and he contributed the article on that subject to the first edition of Cunningham's textbook. I believe that his name first became prominent in surgical practice through his translation of Theodor Kocher's great work, the *Textbook of Operative Surgery*. Kocher was then regarded as the father of modern technique, and it is generally recognized that it was Stiles who first introduced the methods of dry sterilization, with the use of gowns, masks, etc., into Edinburgh. Up to that time everything had been conducted on the strictly antiseptic plan, but his firm advocacy gradually made a change which eventually became general.

Though he touched many fields in surgical work probably his greatest individual contribution was on transplantation of the ureters. I saw a couple of his early cases in Edinburgh in 1905 and was tremendously impressed by the statement that these two little girls were able to sit comfortably throughout a performance of "Peter Pan." But it was his paper to the American Surgical Association at Denver City in 1911 that was the means of bringing the method he then employed before the surgical profession the world over. This marked a great advance, and a new era may be said to have dawned for the victims of congenital anomalies of the urinary tract with incontinence. It was a great delight to many of his friends that at the age of 73 he was present at a meeting of the Medico-Chirurgical Society of Edinburgh when one of the first patients he had treated by transplantation was presented in good health and enjoying complete rectal function and control 23 years after operation.

Stiles was an inspiring teacher, and those who were present at the meeting of the Association of Surgeons held in Edinburgh during his presidential year in 1921 are never likely to forget that wonderful demonstration which he gave on cervical rib. It was my privilege to visit America in company with Stiles in 1906, and a week which we spent together in the Mayo Clinic will always remain memorable. He and William Mayo were greatly attracted to each other and began a friendship on that occasion which lasted throughout the rest of Mayo's life. In 1908 we also paid a short visit to some of the Swiss hospitals, including a most inspiring and profitable time at Kocher's clinic in Berne. Everything was freely open to my friend, and he was cordially received as a distinguished visitor. All American surgeons loved Stiles, and in spite of his being a very bad sailor he several times crossed the Atlantic. It was not only that they were impressed by his work but they were attracted by his personality, for he was an arresting companion and a splendid

taiker, always vivacious and cheerful. He had great zest for work and was filled with enthusiasm, but he seemed to do everything at full pressure so that he took it out of himself. I have no doubt that when he unexpectedly retired from the Chair of Clinical Surgery before the normal age he was suffering from the most strenuous overwork, which continued throughout the 1914–18 war and straight on into the period when he took over the new duties of the chair.

Stiles was proud of the family tradition as doctors and often referred to his experiences of general practice with his grandparent and father in Lincolnshire. This period was dealt with in his most interesting "Reminiscences of a Surgical Training," as he entitled his inaugural address in 1919 as Regius professor. As an operator he was delightful to watch, for he was precise and accurate though deft and speedy. All his operations were planned on an anatomical basis. There was no doubt about his position and success in the Scottish capital. Stiles was among the most loyal of friends, and was always ready to help the younger men and especially those who showed enthusiasm. He was greatly attached to the first Lady Stiles and to his daughter, and they on their part sympathized and helped him in his devotion to his professional duties. His second wife, who survives him, proved a wonderful and most devoted companion, and the happiness of his last days was enhanced by her tender and understanding care.

Mr. STANLEY DODD, consulting obstetric surgeon to the Westminster Hospital, consulting surgeon to the Chelsea Hospital for Women, and consulting gynaecologist to the Bolingbroke Hospital, died in London on April 21, aged 70. The third son of Arthur Dodd of Tulse Hill, he was educated at Eastbourne College, Caius College, Cambridge, and the Westminster Hospital, where he won an entrance scholarship, and after qualifying in 1902 was in turn house-surgeon, house-physician, and obstetric tutor. He had also been senior resident medical officer at Queen Charlotte's Hospital. He obtained the F.R.C.S.Ed. diploma in 1908, was elected F.R.C.O.G. in 1929, and F.R.C.P.Lond. in 1932. While in full harness as an obstetrician and gynaecologist in London, Stanley Dodd examined for the Universities of Cambridge and London, for the English Conjoint Board, and for the Central Midwives Board. He had a happy knack of putting nervous examinees at their ease, as he was obviously and rightly more interested in finding out what they did know than in uncovering their limitations. In his chosen specialty Dodd's patent trustworthiness and quiet efficiency enabled him to dispense with mere showmanship, which in any case he was not equipped for and would have despised. He was one of the team of fine surgeons who during the quarter-century which roughly covered the reign of King George V made the Chelsea Hospital for Women a place of pilgrimage for gynaecologists from over-seas. Though quiet in manner, there lurked a twinkle of the eyes which showed a sense of humour; and he was essentially a good colleague to work with. He was part author of the book *Midwifery and Diseases of Women*. He married Miss Phyllis Embury, who, with one son, survives him. He joined the B.M.A. in 1910, but gave up membership when he retired to Churt in Surrey.

Dr. PHILIP PAINE MURPHY, acting surgical specialist at the Civil Hospital, Aden, who died on April 7, was born in County Wexford on Aug. 23, 1910, the son of a doctor. After graduating in 1932 as M.B., B.Ch. of Trinity College, Dublin, he worked in hospitals in England for two or three years and then joined the Colonial Medical Service in British Somaliland; he was transferred to Aden in 1939. During his service in Aden he carried out at various times the duties of all the higher posts in the medical department. The following are extracts from a colleague's tribute: "Of his many sterling qualities perhaps the most outstanding were his manliness, honesty, sincerity, straightforwardness, and thoroughness. He aimed at perfection in all that he undertook, in work, in play, and in the smallest details of everyday life. He had an inquiring mind, and any new idea that he took up he pursued with great enthusiasm. He was an able surgeon who inspired confidence in his patients. The war years bore especially hard on him, with extra work and shortages of staff, and few would have carried through as he did. The spirit of comradeship that prevailed among the hospital staff—Arab, European, Indian, and Somali—was ample testimony both to his ability as an administrator and to his attractive personality."

Miss ROSA TURNER, L.R.C.P.&S., who died on April 27 at the Royal Free Hospital after a short illness, was the youngest daughter of the late Alfred Turner, of the Manor House, Upper Twickenham, and practised for many years from 87, Gower Street. She studied at the London School of Medicine for Women and obtained the Scottish triple qualification in 1895. She had been honorary clinical assistant in the venereal disease clinic at the Elizabeth Garrett Anderson Hospital in Euston Road and was for some years visiting medical examiner at the Brentwood Colony and Homes for the Feeble-Minded under the old Metropolitan Asylums Board; she had also been clinical assistant in the V.D. department of the London Hospital and surgeon to the same department at the Bermondsey Hospital and Medical Mission. Dr. Turner joined the B.M.A. in 1898; she was a Fellow of the Royal Society of Medicine and an active member of the Medical Women's Federation.

Dr. ALFRED COLERIDGE, who died on April 28 at Taunton, had practised for many years at Wadebridge, Cornwall. A native of Bristol, he entered the University with a scholarship from Clifton College in 1892, qualified in 1901, and took the M.B., B.S.Lond. in 1905 after holding house appointments at the Bristol General Hospital and at the Mount Vernon Consumption Hospital in Hampstead. He was for four years surgeon to the Bristol Dispensary, and during the war of 1914–18 served as major, R.A.M.C., T.A., with No. 46 (Wessex) Casualty Clearing Station in France. On returning to civil life he practised in North Cornwall and was appointed M.O.H. by the Wadebridge Urban District Council in 1923. Dr. Coleridge had been a member of the Cornwall Panel Committee and commandant of the Wadebridge Mobile Aid Post in the A.R.P. service.

Medico-Legal

SECRECY IN JUDICIAL PROCEEDINGS

In a divorce action held at Birmingham Assizes at the beginning of April it appeared that one of the parties was said to be suffering from venereal disease and that, in order to simplify the procedure, the doctor treating the party had been sent a questionary signed by both the petitioner and the respondent, with the consent of the solicitors on both sides. If the questions had been answered in one way the petitioner would have succeeded, and if in another way the respondent would have succeeded. The doctor had refused to answer the questionary though he had said that he would give evidence in court if summoned. He actually gave evidence, and there was no question of his good faith. Mr. Justice Lewis gave an important ruling, which he said had the blessing of Lord Merriman, president of the Divorce Division. It was of the greatest importance, said the learned judge, that appropriate secrecy should be observed in connexion with V.D. clinics, and nothing should be done to diminish their efficiency or infringe the confidential relationship between doctor and patient. This, however, did not justify a doctor in refusing to divulge confidential information to a patient or any named person when asked by the patient to do so. The doctor could in the circumstances have given the information required without any breach of confidence.

This ruling, which will be a valuable guide to doctors in the future, recalls the case of Garner *v.* Garner (1920), in which the wife petitioned for divorce on the grounds of cruelty, alleging that her husband had infected her with venereal disease. She called a medical officer of a hospital to prove that she had the disease. Although she was his patient and therefore had waived the duty of secrecy between doctor and patient, as in the present case the patient waived it by signing the questionary, the doctor and the chairman of his house committee took the view that he was bound by the Public Health (Venereal Disease) Regulations, 1916, to maintain secrecy. Mr. Justice McCardie said that the statutory regulations could not override the obligation of a medical witness to give evidence. Mr. Justice Lewis has extended the principle by ruling that they cannot override the doctor's obligation, when asked by his patient, to give a preliminary statement. Although technically there may be a conflict between the wording of the regulations and the demands of justice, the rule of secrecy exists solely in the interests of the patient, and if the patient waives it there can be no further reason for its observance. If the patient does not give consent the situation, of course, is totally different, and the doctor should refuse a preliminary statement and only give evidence in court at the direct order of the judge.

RAYNAUD'S DISEASE AS AN ACCIDENT?

A workman may successfully claim compensation if personal injury by accident arises "out of and in the course of" his employment. These words have caused perhaps more legal argument than any others, partly because of the desire of the court to benefit the workman wherever it possibly can. The result has been that the word "accident" has gradually acquired a meaning considerably wider than it usually has among laymen. Quite early in the history of workmen's compensation the House of Lords decided[1] that a disease such as anthrax may in certain circumstances be compensable, because the entry of a germ into the body may be an accident. The principle was extended in a case[2] in which the Court of Appeal and later the House of Lords awarded compensation to a girl who had over a long period suffered from slight cuts and abrasions which gradually caused poisoning. That case was followed recently in an appeal[3] by a workman who had been employed as a "rotary fettler." He had to cut material with an electrically driven instrument which vibrated at 2,800 revolutions a minute: he held it tight in his left hand and pressed it against the material with his right, using the weight of his body to increase the pressure. After about a year he began to find the tips of the fingers of his left hand going dead in the morning. He showed it twice to the works doctor, but each time he was told it was not a "dead hand." Finally his hand went dead three times in one morning, and he was incapacitated totally for three months and thereafter partially. His own doctor said that he was suffering from Raynaud's disease, due partly to loss of blood in the tissues which caused the hand to go white, and partly to loss of blood in the nerves causing spasm of the blood vessels. The first cause was an upsetting of the balance of nervous control of the blood vessels due to the tight grasping of a rapidly vibrating instrument; every time the tool was used the condition got worse. The judge accepted the facts, but held that to constitute an injury by accident the workman must be suddenly and decisively attacked at his work, and that the gradual ruining of his blood vessels did not bring him within the Acts. He was influenced by a decision of the Court of Appeal[4] given 30 years ago against a worker who gradually became poisoned by lead, on the ground that a gradual process could not be an accident. The Court of Appeal has now held that its earlier decision was not in accordance with later decisions of the House of Lords and so ought not to be followed. Guided by these later authorities, the court took the view that each vibration caused by the rapidly rotating instrument was an infinitesimal blow to the man's hand and arm transmitted to the nerves, causing an infinitely small damage to their tissues and in the end cutting off the flow of blood needed to keep the hand in a healthy condition. The mere fact that the breakdown did not occur until the cumulative effect of the tiny blows had produced a certain degree of alteration in the nerves did not, they said, affect the character of the cause. An injury is still caused by accident even though it is due to an infinite number of small accidents and not to one large one.

[1] Brintons, Ltd. *v.* Turvey, 1905 A.C. 230.
[2] Burrell *v.* Selvage, 1921 90 L.J.K.B. 1340.
[3] Fitzsimons *v.* Ford Motor Co., 1946 1 All E.R. 429.
[4] Steel *v.* Cammell Laird, 1905 2 K.B. 232.

In making a medical film, up to eighteen months may elapse between the time that preparations are begun and the time that the completed film is available. During this interval someone else may unwittingly have planned another film on the same subject. The Scientific Film Association has undertaken a voluntary co-ordination scheme intended to minimize the possibility of such overlapping. It is suggested that the S.F.A. Medical Committee should be informed confidentially at the inception of a plan to make a new medical film. The committee will then do its best to advise the intending producer of existing films on the subject, and if practicable will arrange a viewing. Where two or more organizations or persons disclose to the committee the same or overlapping subjects for a medical film, the two parties concerned will be informed that others are in the field, but names will not be disclosed. However, if both parties wish for a consultation the committee will arrange this, and will in the case of collaboration as in individual work assist with what technical advice is at its command. Offers of co-operation and any other inquiries should be addressed to the Hon. Secretary, Medical Committee, Scientific Film Association, c/o the Royal Society of Medicine, 1, Wimpole Street London, W.1.

Medical Notes in Parliament

Members of the Standing Committee

To Standing Committee C, for the consideration of the National Health Service Bill, have been added Mr. Bevan, Mr. Willink, Dr. Clitherow, Dr. Comyns, Mr. Somerville Hastings, Mr. Linstead, Dr. Morgan, Sir Henry Morris-Jones, Colonel Stoddart-Scott, Dr. Stephen Taylor, and other members.

HEALTH SERVICE BILL IN COMMITTEE

With Mr. F. G. BOWLES in the chair, a Standing Committee of the House of Commons, to which several medical M.P.s had been added, began on May 14 the Committee stage of the National Health Service Bill. Mr. Bevan and Mr. Key were the Ministers in charge of the Bill. Mr. Bevan proposed that the Committee should meet each week on Tuesdays, Wednesdays, and Thursdays. He said this was essential to get the Bill on the Statute Book this session. Mr. Richard Law and Sir Henry Morris-Jones assented to the proposal. Each disclaimed for his friends any intention of obstructing the Bill. The Committee agreed to sit three days a week.

CONSULTATION WITH CENTRAL COUNCIL

In Clause 1, defining the duties of the Minister for promotion of a comprehensive health service, Mr. WILLINK moved to insert:

Provided that in the discharge of the said duty the Minister shall consult with the Central Health Services Council, to be constituted under this Act, and shall have regard to regional schemes to be submitted to him by the Regional Boards to be constituted under this Act for the proper planning and integration of all such services as aforesaid within the areas of such boards.

Mr. Willink said the Opposition wished to raise the status of the Central Health Services Council and the question of the integration of the health services as a whole. The Opposition amendment did both. He pointed out that the amendment referred to Regional Boards, not merely to Regional Hospital Boards. He was sure Mr. Bevan wished to avoid the service being excessively bureaucratic or over-centralized. The service must win and keep the confidence of the medical profession, which was an individualized one, both centrally and locally. The principle of consultative councils had been established in 1919, but there had since been a lack of confidence in the medical profession owing to the absence of adequate consultation between the Ministry and the profession. There had consequently been disappointment in the profession at the progress made by the Ministry of Health. He felt that the Bill, as it stood, was inadequate on the status of the Central Council. Under it the Minister undertook no duty to use the services of the Central Council for any purpose and no obligation to consult them. The status of the Council should be stated in close association with the Minister's main duties in Clause 1.

"PLANNING" THE HOSPITAL SERVICE

Mr. Willink said that the second part of his amendment related to one of the greatest changes made by Mr. Bevan in the previously projected health scheme. The Bill made no provision for the planning of a comprehensive health service. Therefore the amendment introduced the phrase "Regional Boards," leaving the function of these to be defined later. There was not even provision for planning regional hospital services. The Regional Hospital Boards were only to administer what existed. Did the Committee want an extraordinary centralization entrusting to the Minister's staff the planning of all hospital development throughout the country? Surely some body nearer the people in the regions or the area should have a planning function. Moreover, it was essential in a health service that someone should consider how the various parts should fit in. Someone should decide the proportion between specialist beds in hospitals and general practitioner beds. Some authority should decide who should provide V.D. services. Similarly with the health centres, which the White Paper, though not the Bill, said should be outposts of the hospitals. The Bill left these entirely to the local authorities. Croydon had provided an integrated maternity service. Nothing in the Bill ensured that this would be continued or imitated. In mental services the Bill did nothing to decide who should provide after-care. Ophthalmic services fell under two parts, with no authority to see how these fitted together. The White Paper of 1944 said it was essential that, though still locally conducted, health services should be regarded as parts of a wider whole with some authority to plan the whole. It was, he said, disastrous to leave the vital part of the work to a heavily burdened Department.

AMENDMENT RESISTED

Mr. BEVAN said Mr. Willink's speech showed considerable misunderstanding. The Minister would not set up a Central Advisory Council if he did not intend to consult it. That Council had the power of initiative and a much higher status than most advisory councils. It had also the right to publish annual reports so that the public would be apprised of the advice which it had given to the Minister. If the duty were imposed on it of advising the Minister on everything, the Council would be overweighted. It had the power to advise the Minister on subjects about which he had not asked for advice. Mr. Willink's proposal that the Regional Boards should prepare schemes for integration of services would cause the Boards to break down, and years would be needed to harmonize the different unrelated schemes. The responsibility must rest upon the Minister, where Parliament had placed it. Integration of the services would result from the use of the services. In the past the hospital services had been in the hands of competitive bodies, each denying its services to the other; but in future they could not deny them to anyone, and the common use would prove to be the co-ordination. Under the Bill Regional Hospital Boards were to submit new schemes when called upon. The more that was put into the Bill of a defining character the less elastic the service would become. They must beware of making the whole health service muscle-bound. He felt he must resist Mr. Willink's amendment.

Mr. J. S. C. REID considered that the facts on fundamental matters should be brought to the attention of the Central Council before the Minister took decisions. If the Minister took the view that regional schemes must be centrally prepared there would be a sealed pattern in the Ministry. Mr. Bevan thought that because everybody was to be a public servant there would be no rivalry and no difference of view on the extent of their functions. Mr. H. G. STRAUSS said he found no obligation in the Bill that the Minister should consult the central advisory body on every regulation that he proposed to make.

Mr. LINSTEAD said the professions concerned were suspicious. If the Minister could renew his assurance that any regulations would be communicated beforehand that would affect the attitude of the professions. Mr. BEVAN replied that there would certainly be such consultation on regulations concerning medical matters. Mr. LINSTEAD thought that if that were so the Minister would have the professions with him. On co-ordination he remarked that under the Minister's scheme regional co-ordination would in fact occur through the Minister's regional officers instead of the preferable co-ordination through the representatives of the local health authorities.

The amendment was rejected by 29 to 17. Clause 1 was carried.

LIMITING THE CENTRAL COUNCIL?

In Clause 2 Mr. LAW moved an amendment to remove a limitation on the Central Council. Its advice to the Minister under the Bill was restricted to general matters. Was the Council unable to advise on particular matters, and if so what were these? Under Clause 2 the Central Council might be debarred from advising the Minister on directions to teaching hospitals.

Mr. BEVAN said if the word "general" were deleted the character of the Council would be altered to its own misfortune. The Minister could ask the advice of the Council on any question, but it was inappropriate that a body of 41 persons could submit the whole of the health services to microscopic examination. He added that on subjects such as gynaecology there would be specialized subcommittees to advise him. The reports of these subcommittees would be available to the Central Council as well as to the Minister.

Mr. LINSTEAD said the Central Council would not bother itself about detail. Only the expert body could decide whether a point were of general importance. Mr. HOPKIN MORRIS said the Minister would be wise to omit the word "general." The clause said it should be the duty of the Central Council to advise the Minister "as they think fit." Why not trust these responsible men?

Mr. BEVAN said if the Council thought a particular matter required investigation it would advise the Minister to refer it to an expert committee, if one existed, or to set up such a committee for the purpose. But among the people many bees would be buzzing in many bonnets, and the word "general" would be a protection to the chairman of the Council. Mr. WILLINK said the Council should be able to pronounce upon the Minister's decision on the number of rheumatism centres or plastic surgery centres to be established in the country. But that would not be a "general" matter. Under the Bill the Minister could give unlimited directions to the teaching hospitals which, in the opinion of the Central Council, would be disastrous. Yet that would not be a "general" matter.

Mr. BEVAN replied that the Council could advise on any particular service when a standing advisory committee reported on it, because the report would go to the Central Council as well as to the Minister. The Council could advise on each one of the services provided as well as on all the services as a whole. If further examination showed that the language of the clause prevented the Council from reviewing the advice of standing advisory committees he would have the language altered.

In view of this undertaking Mr. Law withdrew his amendment.

Clause 2 provides that the duty of the Central Council is to advise the Minister upon general matters relating to the services provided under the Act. Sir H. MORRIS-JONES moved to delete "services" and the words following, and to substitute "purposes of this Act defined in Section 1." Mr. WILLINK thought that for years to come many medical services would not be provided under the Bill.

The CHAIRMAN ruled the amendment out.

POWER TO ALTER CONSTITUTION OF COUNCIL

Mr. H. STRAUSS moved to omit the provision that the Minister could, after consultation with the Central Council, vary by Order the constitution of the Council. He said this power was unlimited and dangerous. Mr. BEVAN said he had no sinister intentions. The subsection was for the purpose of practical administration. When the Midwives Board was set up the Board could not be varied in its constitution save by Act of Parliament, and difficulties had followed. He recognized that the Central Council might feel it was living under a threat of replacement. Therefore he was prepared to move, on report, a provision that the Council should be consulted on changes and that the Order should be subject to a negative resolution of the House. Sir HAROLD WEBBE said the balance in the Council was delicate, and there was anxiety lest it should be upset. Mr. STRAUSS withdrew his amendment.

Mr. LINSTEAD moved amendments to ensure that certain standing advisory committees were named in the Bill. He proposed to specify the hospital and specialist services, the general medical services, the dental services, the nursing services, and the pharmaceutical services. Mr. BEVAN said the amendment was unnecessary. Spokesmen of ancillary medical services wished to have standing advisory committees. He sympathized, but could not agree. Moreover, an advisory committee, if named in the Bill, could not be dissolved if circumstances changed. Mr. WILLINK said not only small interests wished to have the statute clear on this point. The White Paper did not specify a standing advisory committee at the centre on hospital organizations. In the Central Council only 5 persons out of 41 must have experience in hospital service. Only 2 out of 41 must have experience in mental health.

The amendment was rejected by 30 to 15 and the Committee adjourned.

Spens Report

Replying to Mr. Somerville Hastings on May 9, Mr. BEVAN said the report of the Spens Committee on the Remuneration of General Practitioners had been published that day. He had not reached a decision as to its implementation. He would have to have discussions with the representatives of the doctors before he reached any decision on the report.

Student Entry to Universities

Answering questions on April 30 Mr. GEORGE ISAACS said that the following decisions had been made about the entry of students to the universities for the year beginning October, 1946: (1) Preference would be given to men who had served in the Armed Forces and others who had been engaged for an equivalent period in important civilian work, provided they were suitable for acceptance by the university concerned; (2) places in all subjects at universities should be filled; (3) any young men still liable to be called up for military service who were granted deferment to enable them to study at a university would be called up on the completion of their course. It would be open to the universities to apply for release in Class B of scholars and highly promising students in any subject who were still serving in the Forces and were in release groups 1 to 55. The universities might also admit students with similar qualifications who had completed three years' work of national importance by Sept. 1, 1946, and such students would be granted continued deferment of their calling-up to enable them to complete their studies.

After the requirements of men in (1) above had been satisfied any remaining places in any subject might be filled by promising students in the age group Oct. 1, 1927, to Sept. 30, 1928, who were recommended for deferment by Joint Recruiting Boards. Any university, however, could make out a special case for reserving places for such students where their accept-

ance meant the exclusion of the older men. These arrangements involved a change for medical, dental, and veterinary students. These had hitherto been reserved; in future new entrants would be dealt with in the same way as other students, and would have to be considered individually for deferment by Joint Recruiting Boards. Mr. Isaacs said he was asking universities to give preference at women's colleges to those women who had been engaged on war service, and, where women competed with men, to limit the women entrants from school to those of exceptional promise.

The number of young men who could be deferred could not be determined until they knew the number of applications coming from ex-Service men. This meant a period of uncertainty which could not be avoided, and acceptances by universities of men in the age group Oct. 1, 1927, to Sept. 30, 1928, must be regarded as provisional.

Atomic Energy Bill

The Atomic Energy Bill was read a first time in the House of Commons on May 1. The Bill provides that the restriction proposed on disclosure of information relating to plant for the purpose of producing or using atomic energy shall not include references to plant designed to be used solely for scientific research or education.

Kenya Medical Service

Mr. BOWLES asked on May 1 whether the Secretary for the Colonies knew that resident Kenya medical officers, on release from the Army, were denied Government appointments, some of which were held by Italians. Mr. GEORGE HALL replied that he was aware of only one case during the war in which an applicant who was a serving military or ex-military medical officer had been refused a permanent appointment in Kenya. He was not considered suitable on account of his age, but had since been given a post under the Kenya Pensions Assessment Board. Four Italian doctors were at present employed on a purely temporary basis, but would be replaced as soon as suitable candidates were available. Several Kenya residents with medical qualifications were also employed as temporary medical officers. Mr. BOWLES said he had information that Italian medical men were taking the places of medical men who had been resident in Kenya.

Deaf Aid

Mr. BURKE, in a debate on Post Office research on May 3, said the Post Office had just been successful, in association with the Medical Research Council, in bringing out an ear aid which would benefit thousands of deaf people in this country.

Diphtheria Incidence and Deaths

On May 6 Mr. VIANT asked the Minister of Health how many cases of diphtheria were recorded in England and Wales in 1945; how many of these proved fatal; what were the patients' ages; and how many in both fatal and non-fatal cases had been immunized.

Mr. BEVAN said the number of cases of diphtheria notified in 1945 was 18,571. The number of deaths notified in 1945 was 720, this figure being provisional. The ages in the cases notified and in fatal cases were as follows:

Age	Notifications	Deaths
0–	188	18
1–	1,086	113
3–	2,001	120
5–	5,948	257
10–	3,467	74
15–	3,330	45
25 and over	2,421	93
Unknown	130	0
Total	18,571	720

Information about cases of and deaths from diphtheria in relation to immunized children for the year 1945 was not yet available.

Mr. WESTWOOD furnished the following table of cases of diphtheria recorded in Scotland in 1945:

Age Group	Cases		Deaths	
	Immunized	Non-immunized	Immunized	Non-immunized
0–4 ..	267	1,175	1	76
5–14 ..	1,104	1,151	5	29
15 and over	153	810	–	15
Totals ..	1,524	3,136	6	120

Analgesia in Childbirth

Mr. MIKARDO inquired on May 2 how Mr. Bevan proposed to make universal the use of apparatus and techniques designed to reduce or eliminate pain in childbirth. Mr. BEVAN said administration of gas-and-air analgesia in childbirth could not become universal until there was an adequate supply of apparatus and of midwives trained to use it. The production of apparatus had already been increased, and all pupil midwives beginning Part II of their course on and after July 1 next would be trained in its use. No practicable step would be neglected, but until more women could be attracted to the practice of midwifery progress was bound to be slow. He promised to investigate the use of the trilene apparatus.

Notes in Brief

The number of deaths from cancer in England and Wales during 1945 was 73,754; this represents a crude death rate of 1,945 per million living. These figures are provisional and relate only to civilians. In 1944 21,571 experiments were performed on living animals in connexion with cancer research. The figure for 1945 is not yet available.

Of 749 men and women employed in the Department of Health for Scotland on April 1, 1946, 23 possessed medical degrees. These figures do not include staff employed in the Department's emergency hospitals.

Only one case of smallpox has been notified in Scotland this year in the person of an Army officer returning on a troopship from India.

The Minister of Supply is not aware of any general shortage of rectifying valves for deep *x*-ray therapy apparatus, although there is difficulty in obtaining replacements for apparatus of German origin.

The Services

Surgeon Rear-Admiral H. M. Whelan has been appointed an Honorary Surgeon to the King in succession to Surgeon Rear-Admiral A. Maclean, C.B., D.S.O., deceased; and Surgeon Rear-Admirals A. E. Malone, C.B., and J. O'Flynn have been appointed Honorary Physicians to the King in succession to Surgeon Rear-Admirals Sir Reginald Bankart, K.C.V.O., K.H.P., deceased, and J. F. Hole, C.M.G., deceased, respectively.

Air Vice-Marshal K. Biggs, C.B.E., M.C., has been appointed Honorary Physician to the King in succession to Air Marshal Sir Harold E. Whittingham, K.C.B., K.B.E., who has vacated the appointment on retirement from the R.A.F.

Surg. Lieut.-Cmdrs. R. T. Jones and H. R. Vickers, R.N.V.R., have been awarded the R.N.V.R. Officers' Decoration.

The Efficiency Decoration of the Territorial Army has been conferred upon the following officers: Lieut.-Col. (Temp. Col.) R. H. Robinson, Lieut.-Col. T. H. Wilson, Majors (Temp. Lieut.-Cols.) F. R. Bettley and A. S. L. Malcolm (T.A.R.O.), Majors E. Davies-Thomas, R. W. Gemmell, and F. S. Mitchell-Heggs, and Capt. (Temp. Major) F. J. Whitelaw, R.A.M.C.

Subadar K. S. Gupta, I.A.M.C., has been appointed M.B.E. (Military Division) in recognition of gallant and distinguished services while a prisoner of war.

The following have been mentioned in dispatches in recognition of gallant and distinguished services in Burma:

Brigs. (Temp.) G. E. Macalevey, D.S.O., M.C., and A. N. T. Meneces, C.B.E. Col. (Temp.) J. R. Dawson; Lieut.-Cols. (Temp.) R. H. Baird, P. W. Hannay, I. Harris, M. S. Holman, W. C. Mitchell, C. E. Moorhead, F. H. Morrell, W. O'Callaghan, R. A. Philp, W. Serle, C. S. Smalley, M.C., and H. G. H. Waters; Lieut.-Col. (Acting) G. A. S. Akeroyd; Major J. S. Mackay; Majors (Temp.) D. Billig, N. H. Bloom, R. T. Bowes, C. W. P. Bradfield, C. McL. Craig, W. R. McK. Couper, J. A. Farrell (killed in action), W. G. Ferguson, W. Fielding, T. Fitt, L. A. Ives, H. T. Laycock, T. R. Maurice, J. McIntosh, D. S. Milne, H. G. Page, W. W. Park, F. D. F. Steede, F. Stephenson, and J. D. Younghusband; Major (Acting) H. A. Daniels; Capts. W. K. N. Brown, R. N. Cates, W. H. Chase, D. H. Crook, R. S. Gibson, J. Griffith, A. A. Martin, G. S. Moore, J. J. Phillips, G. H. Pimblett, M. F. Ronayne, H. M. Smallwood, W. T. Stone, and R. L. Witney; Capt. (Temp.) R. Groat; Lieuts. R. D. Nicholson and N. Slater, R.A.M.C.; Cols. (Temp.) W. A. Burki, C.B.E., and A. H. Craig; Col. (Acting) V. E. M. Lee, I.M.S.; Lieut.-Cols. (Temp.) A. S. Rao, D. R. Cattanach, D. K. L. Lindsay, R. D. Scriven, M.C., and F. W. Snedden; Major S. N. Mukerji; Majors (Temp.) T. J. Davies, G. K. Mitra, A. C. Greene, W. E. Owens, A. N. Subbaraman, and S. F. Thomas; Capts. A. Hamid, S. H. Barker, C. K. Rao, M.C., I. S. Dalton, D. K. Mitra, H. Reza, J. F. Guerra, O. K. Keshavan, K. P. Bhavani, K. N. Sastri, M. C. Nath, M. Aslam, M. T. Aliappa, M. Singh, O. N. Tyagi, R. Singh, A. A. Rawat, S. Sankaran, O. Sookias, T. N. Pisharott, T. J. Gupta, V. C. Venkatachalam, T. S. Vishwanatham, A. M. Yusuf; Capts. (Temp.) G. M. Chakrabarti, I. P. Sen, K. N. Rao, S. J. Luxa, and V. Batra; Capt. (Acting) N. M. Maitra; Lieuts. C. L. Nagrath, C. R. S. Iyengar, B. B. Gosh, V. A. Pepperel, P. Singh, P. K. Tamaskar, and S. C. Sen; Subadars A. Khan, G. Rasul, J. K. Pandey, H. Khan, K. C. Bedi, K. Lal, N. Nath, N. Singh, and T. Singh; Jemadars A. A. Khan, B. Bux, M. Singh, M. T. Hussain, N. Ram, B. D. Pandey, and S. R. Shah, I.A.M.C.

CASUALTIES IN THE MEDICAL SERVICES

Died at sea.—Major Colin Campion, R.A.M.C.
Died in India.—Lieut.-Col. Gilbert Wolridge Rose, R.A.M.C.

Universities and Colleges

UNIVERSITY OF OXFORD

In a Congregation held on May 2 the following degrees were conferred:

D.M.—J. F. Loutit, J. N. Mills (in absence).
B.M., B.CH.—M. B. McEvedy, T. H. S. Burns.

UNIVERSITY OF CAMBRIDGE

At a Congregation held on May 3 the following medical degrees were conferred, all by proxy except one marked with an asterisk:

M.D.—A. G. V. Aldridge, *G. C. Tooth.
M.B., B.CHIR.—R. W. P. Jackson, B. A. J. C. Gregory, R. N. Grabowsky-Atherstone, P. N. Magee.
M.B.—R. G. Orr.

A report by the Council of the Senate on the establishment of a chair of pharmacology appears in the *Cambridge University Reporter* of May 7 (p. 777). This recommends that there be established from Oct 1, 1946, a Sheild Professorship of Pharmacology limited to one tenure, and that the professor be E. B. Verney, M.A., M.B., B.Chir., whose readership in that subject would then lapse.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

At an ordinary meeting of the Council, held on May 9, with Sir Alfred Webb-Johnson, Bt., President, in the chair, Prof. R. V. Bradlaw was re-elected a member of the Board of Examiners in Dental Surgery.

It was decided, subject to the grant of the necessary powers, to establish a Faculty of Dental Surgery in the College.

Dr. G. M. Vevers and Dr. A. J. Durden Smith were admitted as Fellows of the College.

The Walker Prize was presented to Prof. E. C. Dodds; the John Hunter Medal and Triennial Prize to Dr. Joan Ross; and the Begley Prize to Mr. Otto Fleischner.

The Council accepted the trusteeship of the Cecil Joll Memorial Fund, under which there will be awarded a triennial prize for some surgical subject.

The Chase Farm Hospital, Enfield, the Seamen's Hospital, Tilbury, and the Broad Green Hospital, Liverpool, were recognized in respect of the resident surgical post required of the candidates for the Final Fellowship Examination.

Diplomas of membership were granted, jointly with the Royal College of Physicians of London, to J. R. Handforth and to the 125 successful candidates whose names were printed in the report of the meeting of the Royal College of Physicians of London in the *Journal* of May 4 (p. 704); as were the names of the successful candidates for the diplomas in medical radiodiagnosis and medical radiotherapy.

EPIDEMIOLOGICAL NOTES

Discussion of Table

In *England and Wales* an increase was recorded in measles 401, and whooping-cough 62, while the notifications of both diphtheria and dysentery fell by 26.

The largest variations in the local trend of scarlet fever were an increase in London 20 and a decrease in Glamorganshire 20. The returns for diphtheria showed the smallest total for 34 weeks. Whooping-cough was slightly more prevalent in most districts; the largest rise was Glamorganshire 33, and the chief exceptions to the general trend were decreases in London 38 and Middlesex 32. Measles is still mainly concentrated in London and the surrounding counties, and the largest rises were London 119, Essex 66, Middlesex 56, Kent 41, and Warwickshire 41.

The notifications of dysentery were the lowest for 16 months. The chief centres of infection were Lancashire 28, London 25, Staffordshire 14, Kent 13, and Surrey 10.

In *Scotland* increases were recorded for acute primary pneumonia 51, diphtheria 24, and scarlet fever 19; decreases were shown for measles 105 and whooping-cough 15. The incidence of dysentery remained unchanged. The rise in cases of diphtheria was contributed by Glasgow, where the figures rose from 32 to 55.

In *Eire* the incidence of diarrhoea and enteritis increased by 20 and reverted to the level of the preceding weeks. Increases were also reported for scarlet fever 17 and whooping-cough 11.

In *Northern Ireland* scarlet fever fell by 21 cases.

Week Ending May 4

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 945, whooping-cough 2,147, diphtheria 367, measles 2,711, acute pneumonia 610, cerebrospinal fever 58, dysentery 212, paratyphoid 6, typhoid 5.

No. 17

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended April 27.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1946 (a)	(b)	(c)	(d)	(e)	1945 (Corresponding Week) (a)	(b)	(c)	(d)	(e)
Cerebrospinal fever	48	6	32	—	1	56	3	18	3	1
Deaths		1	2				1	1		
Diphtheria	389	27	104	42	11	564	24	126	104	22
Deaths	1	—	—	1	1	7	—	2	2	—
Dysentery	163	25	63	—	—	486	32	188	3	—
Deaths				—	—				—	—
Encephalitis lethargica, acute	—	—	1	—	—	2	—	—	—	—
Deaths		—					—			
Erysipelas			40	8	3			32	7	1
Deaths		—					—			
Infective enteritis or diarrhoea under 2 years				42					16	
Deaths	56	6	2	14	6	43	8	6	4	4
Measles*	2,793	1054	354	29	—	16,023	1058	341	65	23
Deaths	6	1	—	—	—	8	1	—	2	—
Ophthalmia neonatorum	50	5	24	—	—	59	5	15	—	—
Deaths										
Paratyphoid fever	5	—	—	—	—	3	—	2 (1A, 1B)	2 (B)	—
Deaths	—	—	—	—	—	—	—	1	—	—
Pneumonia, influenzal	654	39	11	21	2	530	29	3	9	4
Deaths (from influenza)†	18	2	1	3	—	12	2	1	—	1
Pneumonia, primary			188	28				174	31	
Deaths		28		14	7		25		11	10
Polio-encephalitis, acute	—	—				—	—			
Deaths		1					—			
Poliomyelitis, acute	5	1	—	1	—	5	—	2	—	—
Deaths		—					—			
Puerperal fever		—	23		—		1	11		—
Deaths										
Puerperal pyrexia‡	148	12	17	—	—	128	13	17	2	1
Deaths		—					—			
Relapsing fever	—	—			—	—	—			—
Deaths										
Scarlet fever	1,054	104	147	29	19	1,426	71	212	13	34
Deaths	3	—	—	—	—	2	—	—	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths				—	—				—	—
Typhoid fever	4	—	—	2	1	3	—	—	13	—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhus fever	—	—	—	—	—	1	—	—	—	—
Deaths				—	—				—	—
Whooping-cough*	1,669	138	76	36	5	1,190	65	201	39	24
Deaths	7	3	1	—	—	4	—	3	1	—
Deaths (0–1 year)	354	50	53	34	16	304	40	40	29	23
Infant mortality rate (per 1,000 live births)										
Deaths (excluding stillbirths)	4,553	662	578	197	131	4,057	576	536	190	129
Annual death rate (per 1,000 persons living)			12·7	12·6				12·2	12·3	
Live births	8,303	1202	1062	454	258	6,587	701	906	396	252
Annual rate per 1,000 persons living			21·4	29·1				18·1	25·6	
Stillbirths	235	32	40			186	21	30		
Rate per 1,000 total births (including stillborn)			36					32		

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

‡ Includes puerperal fever for England and Wales and Eire.

Medical News

The Nutrition Society will hold a conference on Saturday, May 18, at 2 p.m., at the London School of Hygiene and Tropical Medicine, Keppel Street, London, W.C.1. This follows the annual general meeting of the English Group, which is to be held there on the same morning, at 11 a.m. The programme and time-table are as follows: Lt.-Col J. Bennet will read a paper on nutritional conditions in Army prison camps in the Far East. Dr. D. A. Smith will speak on experiences in the civilian camp at Hong Kong, and Prof. R. G. Scott MacGregor on similar experiences in Singapore. Dr. R. C. Burgess and Dr. E. K. Cruickshank will deal with conditions in the military camp at Singapore, and Dr. Cicely Williams with nutritional conditions among women and children. The opener of the discussion will be Dr. J. V. Landor. Non-members are admitted to meetings of the Society by the introduction of a member. Meetings are private, and no unauthorized account may appear in the press. Further details of the Nutrition Society can be obtained from the hon. secretary, Dr. Leslie J. Harris, Nutritional Laboratory, Cambridge.

At a meeting of the Colour Group of the Physical Society to be held at 3.30 p.m. on Thursday, May 23, in the lecture room of the Royal Photographic Society, 16, Prince's Gate, Kensington, S.W., a paper on "The Colour Sensitivity of the Retina within the Central Fovea of Man" will be presented by Dr. L. C. Thomson and Dr. W. D. Wright, and will be followed by an informal discussion.

At a meeting of the Medical Group of the Royal Photographic Society to be held at 16, Prince's Gate, London, S.W.7, on Thursday, May 23, at 6.30 p.m., Miss Sylvia Treadgold, Mr. Victor Willmott, Mr. Norman K. Harrison, and Dr. B. Richardson Billings will give short papers on "Methods in Medical Photography," with illustrations. A discussion will follow.

At a meeting of the Medico-Legal Society to be held at 26, Portland Place, W., on Thursday, May 23, at 8.15 p.m., the president, Dr. W. Norwood East, will read a paper on "Crime and Maturity."

A meeting of the Middlesex County Medical Society will be held at Shenley Hospital on Saturday, May 25, at 3 p.m.

The forty-seventh annual meeting of the Association of Port Health Authorities of the British Isles will be held in the City Chambers, High Street, Edinburgh, on May 28, 29, and 30. Among the papers to be read are one by Dr. M. T. Morgan, M.O.H., Port of London, on some aspects of the control of smallpox, and another by Dr. W. P. Cargill, on developments in disinfestation. The honorary secretary of the Association is Dr. H. C. Maurice Williams, Health Department, Civic Centre, Southampton.

A general meeting of the Heberden Society will be held at the Medical Society of London (11, Chandos Street, W.) on Friday, May 31, at 5.30 p.m., when Mr. H. Jackson Burrows and Dr. George Graham will present a paper on "Spinal Osteoporosis of Unknown Origin."

Dr. L. Alice Hamar has been elected a county councillor for Salop. Dr. Aubrey Ireland has been re-elected as county alderman for Salop and chairman of the Mental Deficiency Committee; he has also been elected chairman of the West Midland Joint Board for Mental Deficiency.

The Medical Women's Federation will award, in the autumn, either two grants (one of £50 and one of £25) or one grant (of £75) from its Christine Murrell Postgraduate Fellowship Fund. Applications are invited from women general practitioners, who must be members of the Federation. Age, qualifications, experience, and some indication of the use to which the grant would be put should be stated. Applications must be received not later than Aug. 31, and should be addressed to the Secretary, 73, Bourne Way, Hayes, Bromley, Kent.

For the delegations of seven Belgian and six French surgeons who attended the conference of the Association of Surgeons in London the British Council has arranged a provincial tour to Manchester, Oxford, and Edinburgh. They are visiting hospitals and other medical institutions under arrangements made by Prof. H. Platt, University of Manchester, Prof. Hugh Cairns, University of Oxford, and Prof. J. R. Learmonth, University of Edinburgh.

The Treasury has made an Order the effect of which is to exempt from Purchase Tax batteries of not less than 15 volts and not more than 45 volts specially designed for high-tension supply for deaf-aid appliances and using layer-type cells not exceeding 6 mm. in thickness with zinc elements of which each face does not exceed 500 sq. mm. The exemption applies only to goods which are delivered on sale, or appropriated to retail trade or similar purposes, on or after May 20, 1946, or, in the case of imported goods, which are entered with the Customs or delivered from bonded warehouse for home consumption on or after that date.

Sir Howard Florey, F.R.S., is visiting France under the auspices of the British Council from May 18 to 25 to lecture on penicillin and allied subjects in Lyons, where he will receive an honorary degree, and Paris.

The Rockefeller Foundation has made a grant of £22,000 to develop practical work in such problems as industrial relations, resettlement of returning Service men, and the current difficulties of families and communities in the reconstruction period. Two anonymous donors have added £3,500 to this fund. The work will be undertaken by a group of psychiatrists and psychologists with wartime experience in the field of social psychology, and will form the main task of a new organization, the Tavistock Institute of Human Relations, whose formation is being planned by the Council of the Tavistock Clinic, London.

The Cardiff Public Health Committee has planned a Health and Housing Exhibition to be held in the City Hall from June 17 to 22, and the set-up is full of interest. There will be 10 bays in the large assembly room representing health through the home, school, recreation, nutrition, personal hygiene, housing, community, careers, port, and knowledge. In two large rooms adjoining the main hall will be exhibits of hospital services for mental and bodily health. All who are interested in the possibilities of health education are invited to visit the exhibition at Cardiff and while there to discuss the subject with the specialists in charge of each bay. The medical officer of health for Cardiff, Dr. J. Greenwood Wilson, is organizing the exhibits, and a detailed programme will be sent on application to the Public Relations Officer, 52, Park Place, Cardiff.

The British Association of Urological Surgeons Home and Overseas will hold its annual general meeting at the Royal College of Surgeons on June 27, 28, and 29. The business meeting is arranged for the first day from 4 p.m. On June 28, at 10 a.m., the president, Mr. Ogier Ward, will open a discussion on the treatment of benign enlargement of the prostate, and the afternoon will be devoted to operating sessions at several hospitals. There will be a demonstration of films of urological interest on Saturday, June 29. Further particulars and tickets for lunch and dinner at the College on June 28 can be obtained from the secretary at 45, Lincoln's Inn Fields, W.C.2.

Letters, Notes, and Answers

All communications with regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: *Aitiology Westcent, London.* ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated.

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B.M.A. SCOTTISH OFFICE: 7, Drumsheugh Gardens, Edinburgh.

ANY QUESTIONS?

Closed Circle in Malaria

Q.—*The malaria parasite spends part of its life in man and part in the mosquito. How did it get into this apparently closed circle in the first instance?*

A.—This question might be asked of a number of other parasites which have a specialized life-cycle involving two quite different hosts. The answer is not known, but presumably the plasmodium was originally a parasite of either the mosquito or of man, and a mutation occurred which enabled it to propagate more successfully by the complex two-host arrangement that exists now. There are, of course, other protozoa, both in man and in the mosquito, which do not cause disease but which, presumably, might evolve into pathogenic types.

Thiouracil for Thyrotoxicosis

Q.—*What is the correct mode of administration of thiouracil, and is it wise for a doctor who has no experience of the drug to prescribe it?*

A.—Thiouracil is usually given in a dosage of 0.6 g. daily, though it is probable that smaller doses are as, or almost as, effective. This dose is continued until a definite response is obtained, the criteria of response being general improvement,

increase in weight, fall in pulse rate, loss of vasodilatation, and fall in B.M.R. Where the apparatus is not available the last is not essential. After response the dose is reduced to 0.2 g. daily. After a few months it is often possible to reduce the dose to 0.1 g. daily, and eventually, in a few patients, it may be discontinued. There is only one serious danger—that of agranulocytosis. Most of the reported cases occurred with a higher dosage than that which is now used. Nevertheless, a white cell count should be done every other day while the initial dose is being administered. A drop below 5,000 per c.mm. should be a signal for stopping the drug, and a continued drop, or symptoms of agranulocytosis, should be treated immediately with pentose nucleotide and liver injections (both of doubtful value) and blood transfusion.

Lest this should seem rather frightening advice, I would add that I have never seen a case of agranulocytosis due to thiouracil, and that since the original high dosage was dropped I have not seen one of even granulopenia. More common but less serious complications, which may be neglected provided that a watch is kept on the white cells, are skin rashes, conjunctivitis, nausea, and depression. It is possible to overdo it and produce hypothyroidism, but this is evidence of carelessness, and anyhow it clears up when the drug is discontinued.

If proper care is exercised there is nothing against the use of thiouracil by those who have no experience of the drug provided they have experience of the disease. There are, however, circumstances in which surgery is still indicated. Thiouracil should not be used if the goitre is very large, because the treatment does not reduce its size and may even (though probably only in excessive dosage) increase it. For the same reason it should not be used if there is any evidence of pressure on neighbouring structures or if the goitre is retrosternal.

Phytic Acid in Oatmeal and Bran

Q.—*The regular ingestion of oatmeal is said to have a rachitogenic effect because of its large content of phytic acid. Is this also true of bran?*

A.—Wheat contains as much phytic acid as oats, and this phytic acid is largely concentrated in the bran and germ. Bran is therefore exceedingly rich in phytic acid. Wheat products, however, are on the whole less prejudicial to calcium absorption than similar preparations made from oats, because wheat contains an enzyme—phytase—which may destroy part of the phytic acid during the manufacturing or baking processes. Nevertheless, bran will probably do more to prevent the absorption of calcium from the gut than an equal weight of oatmeal. Neither bran nor oatmeal will deplete the body of calcium if the diet contains plenty of milk and cheese.

Legal Responsibility for Negligence

Q.—*A dermatologist prescribes a correct dose of x rays for a patient who is then treated by a technician in an x-ray department controlled by a radiologist. If through an error on the part of the technician a patient is damaged by the x rays, who carries the responsibility—the dermatologist or the radiologist?*

A.—The dermatologist presumably carries no liability, for he has not himself been negligent and is not in control of the technician, who is therefore neither his servant nor his agent. The liability of the radiologist depends on the degree of control he was in duty bound to exercise. If he had good reason to suppose that the technician was competent to give the treatment without supervision, and if to do so was the technician's duty according to recognized medical practice, then the radiologist is not liable. If, however, special circumstances existed which made it reasonably necessary for the radiologist to supervise or control in some way the actual giving of the treatment by the technician—for example, if the treatment were especially difficult or the technician relatively inexperienced—then the radiologist might be held to have been negligent, but the action would be founded on the radiologist's personal negligence rather than on his liability for that of the technician.

Medical auxiliaries employed in hospital departments are recognized as fully competent to do the work allotted to them, and would only rarely, if at all, be regarded as the servants or agents of the medical chiefs of the departments. Their negligence can, however, be visited upon the hospital authorities who employ them, for they are the servants or agents of the hospital. The questioner is advised to read the full judgments in the case of Gold *v.* Essex County Council (*All England Reports*, 1942, **2**, 237), in which the facts were similar. It is significant that in that case the plaintiffs did not allege that the radiologist, still less the dermatologist, was in any way responsible for the negligence of the radiographer in giving treatment for a skin complaint. Lord Justice MacKinnon indicated in passing, purely by way of illustration, that if the radiographer had been merely doing something which the dermatologist had told him to do, and as he told him to do it, the dermatologist would be liable. Such circumstances, however, are probably rare in hospital practice.

Inheritance of Otosclerosis

Q.—*What advice would you give a young woman of 25 suffering from otosclerosis and anxious to marry? The deafness is severe; with an electrical device she can hear general conversation with difficulty. What are the chances of inheritance of the disease? Her future husband's family history is clear. Her own father was deaf, but the nature of the deafness was never diagnosed.*

A.—It is well known that during pregnancy and after childbirth the deafness of otosclerosis sometimes increases, but this happens in an erratic fashion, not only generally but also individually. That is to say, a woman may suffer no further loss of hearing from one pregnancy but may be decidedly affected for the worse by another. This pregnancy factor has therefore probably been overestimated, though the patient should certainly be made aware of it, as also of the possibility of transmitting the defect, so the history on the male side must receive consideration. It is evident that if the hearing becomes worse it will also be worse even when the hearing aid is in use. If the patient wishes to marry she should not be discouraged from doing so on her own account, but the risk of transmitting the defect to offspring is not entirely her own affair.

Otosclerosis is often due to a dominant gene, though its expression is sometimes irregular—i.e., a generation is skipped. Some affected persons, however, have no affected relatives. It may be that in them some non-genetic error of development is responsible. Instances are in fact known in which what appears to be the same end-result is due sometimes to an abnormal gene, sometimes to environmental causes. Thus, the crucial point about the question is whether the patient's father did indeed suffer from otosclerosis. One wishes that more were known about him. If there is nothing in his known history inconsistent with otosclerosis, then in view of his daughter's condition it seems probable that he was affected. If so, inheritance will be dominant and the chance that any child of the patient will also carry the gene is one in two. A child bearing the gene would usually, though not inevitably, develop otosclerosis. One would also like to know more about the family history, in particular about the brothers and sisters both of the patient and of her father. If there were large numbers of these, all normal, the genetic prognosis might be improved.

Thrombo-angiitis Obliterans

Q.—*What is the most effective treatment for thrombo-angiitis obliterans?*

A.—There is no really effective treatment. The position is that no certain measures are known of avoiding further arterial and venous occlusions, though it is commonly agreed that tobacco should be given up. It is also agreed that symptomatic improvement may be produced by measures designed to increase the blood-flow to the limb and to open up collateral vessels—such as sympathectomy and the use of intermittent venous occlusion.

Tremor and Pain in Paralysis Agitans

Q.—*Can anything be done to relieve increasing tremor and pain in an early case of paralysis agitans?*

A.—In paralysis agitans tremor is generally the most intractable of the symptoms, and patients are usually best advised to reconcile themselves philosophically to its existence. The common medicinal remedies (atropine, stramonium, hyoscine) are more efficacious in helping the rigidity, the feelings of tension, and the reluctance to move. Very large amounts may

produce a slight and temporary inhibition of the tremor, but such large doses are rarely justifiable, especially in a disease which is progressive.

Pain is not a common symptom in paralysis agitans; it is most often due to stiffness and to adhesions forming around the joints, and in such cases will be relieved by massage, passive movements, radiant heat, and hot baths. Rarely "thalamic" or "central" pain occurs in paralysis agitans, and proves most intractable; gelsemium is worth a trial, however.

Endometriosis

Q.—*A woman of 35, with two children, has pain in both iliac fossae, more severe during menstruation, and has been diagnosed as a case of endometriosis. Should she be treated by operation, by x-ray therapy, or by radium?*

A.—As a general rule surgery takes precedence over *x* rays and radium in the treatment of endometriosis. In the first place, the diagnosis can rarely be made for certain without laparotomy. In particular, it is often difficult to exclude chronic pelvic infection, and the application of radiotherapy to such a case might have unfortunate results. Secondly, in young women treatment short of ablation of ovarian function should be the aim. At operation local excision of the growth or the greater part of it is often found possible. Even when the removal is incomplete and ovarian function is conserved the results can be surprisingly good. When the condition is extensive and conservative measures are out of the question, surgical treatment remains preferable, since it offers the means not only of destroying ovarian function but of dealing with the dense adhesions and the displacement of pelvic organs. These latter remain after radiotherapy and may continue to cause discomfort.

The chief indication for deep *x*-ray therapy is to suppress ovarian function in those cases in which symptoms recur after a conservative operation—that is, when the diagnosis has been made for certain and when the gross manifestations of the disease have been dealt with. Radium inserted into the uterus is a less efficient means of destroying ovarian function, but it is occasionally used for the direct destruction of an accessible endometriomatous growth, such as one situated in the recto-vaginal septum.

In the case quoted, and on the evidence submitted, the diagnosis of endometriosis is by no means certain. The multiparity of the patient is rather against it. If she does suffer from endometriosis it might be worth while delaying active treatment in the hope that she will conceive again. She may have to wait some time for this, because low fertility is almost invariably associated with endometriosis, but if she succeeds in becoming pregnant spontaneous cure is to be expected.

Hormone Effects on Electrolytes

Q.—*Parathormone increases the excretion of phosphate ion. Cortin reduces the excretion of sodium. Posterior pituitary extract not only corrects the polyuria of diabetes insipidus but also the hyperchloraemia which may be present in this condition. Are these effects brought about by an action on the renal tubules, or are they secondary to changes in the metabolism of electrolytes?*

A.—If the questioner means to ask whether the changes in concentration of urinary electrolytes result from changes in the concentration of these electrolytes in blood plasma, the answer is clearly No, because in the first two matters cited in the question the changes in urinary concentration are certainly the inverse of those in the blood plasma. It is probable that parathyroid extract acts directly on bone, since it is effective in the absence of the kidneys (H. Selye, *Arch. Pathol.*, 1942, **34**, 625; T. H. Ingalls, G. Donaldson, and F. Albright, *J. clin. Invest.*, 1943, **22**, 603; H. C. Stoerk, *Proc. Soc. exp. Biol.*, N.Y., 1943, **54**, 50), but, as it produces an immediate increase in the urinary excretion of phosphate (W. R. Tweedy and W. W. Campbell, *J. biol. Chem.*, 1944, **154**, 339), it is possible that it acts also on the kidney tubules. Nevertheless, when parathyroid extract is given together with phosphate, no influence of the extract on the clearance of inorganic phosphate can be observed (M. Fay, V. G. Behrmann, and D. M. Buck, *Amer. J. Physiol.*, 1942, **136**, 716). In the latter experiments a possible complicating factor is the administered inorganic phosphate.

Desoxycorticosterone acetate increases serum sodium and chloride concentrations as well as increasing the plasma volume in normal dogs (M. Clinton, jun., G. W. Thorn, H. Eisenberg, and K. E. Stein, *Endocrinol.*, 1942, **31**, 578), and it seems extremely probable that this results at least in part from a direct action on the kidney. Nevertheless, the influence of adrenal cortical hormones on electrolyte metabolism in muscle cells is clearly an important one (cf. D. M. Harkness, E. Muntwyler, F. R. Mautz, and R. C. Mellors, *J. Lab. clin. Med.*, 1942, **28**, 307). As the result of their investigations in normal dogs and in dogs suffering from diabetes insipidus, Hare and his colleagues (*Amer. J. Physiol.*, 1943, **140**, 334) conclude that "for the regulation of water exchange there is a system which includes the hypothalamico-hypophyseal mechanism, which, through its sensitivity to changes in the salt content of the blood, controls the secretion of pituitrin, and thereby the concentration in which salt is reabsorbed by the renal tubules back into the blood." Nevertheless, they conclude that the factors which determine the partition of chloride between tubular reabsorbate and urine "are not revealed."

In general, it may well be that the influence of these hormones on kidney excretion is a particular aspect of their general action on the electrolyte metabolism of the body as a whole, but although there is no evidence that either the general action or the action on urinary excretion is primary, there is more reason to consider the possibility that the influences on the body in general are secondary to the action on urinary excretion, rather than the converse.

Chemical Prophylaxis of Venereal Disease

Q.—*Can you give me information about recent views on the chemical prophylaxis of venereal disease?*

A.—Sulphadiazine has proved very effective in the prevention of gonorrhoea and chancroid, particularly in the American Forces. The dose is 2 g. by mouth as soon after exposure as possible; some recommend, in addition, 2 g. next morning, and a similar dose four hours or so later.

Calomel ointment is effective against syphilis if employed early; recent work has shown that particle size is important. Thus, calomel containing particles of 100 microns protected only 2 of 39 rabbits infected with *Spirochaeta pallida*, whilst that of 5 μ protected 9 out of 40, and that of 1 μ 15 out of 40. A good deal of work on chemical prophylactics has been carried out in America during the war, especially on arsenicals, but as the reports are "restricted" it is not possible to give the results. The British Army prophylactic cream, containing oxycyanide of mercury and calomel, is effective if used early enough; soap and water also appears to be effective against syphilis and gonorrhoea, but much less so against chancroid. With any form of chemical prophylaxis the time element and thoroughness of application are the most important factors.

INCOME TAX

Payments in Lieu of Residence, etc.

"DEMOBILIZED" ask whether such payments are liable to tax, and suggest that if so the taxation is "most unjust."

*** Such payments *are* liable. In this connexion it should be remembered that with few exceptions taxpayers have to meet the cost of the accommodation and board of themselves and their families out of the net amount left after payment of income tax on their earnings. The exception is that quite small class of taxpayers who receive accommodation, etc., in kind as part of their emoluments. Legislation would be necessary to alter the present state of the law, and it might perhaps be more likely to take the form of making such emoluments liable to tax than that of exempting such portions of emoluments as are expended on the accommodation, etc., of the taxpayer.

Service in India

"HEPAR" served in India from Jan. 1, 1944, to Feb. 25, 1946; he married there and has now returned to the United Kingdom.

*** Broadly speaking, liability to British tax on Indian Army pay depends on whether the individual has, while abroad, a residence available for his use in this country. As "Hepar" (unlike the other officer to whom he refers) apparently had no such residence in this country while he was abroad, he is not liable on his Indian pay. If he had such a residence he would be liable on the amount of his remittances to the United Kingdom.

Tax on Colonial Pension

A. N. is in receipt of a pension from which the Crown Agents deduct both British and Colonial tax.

*** We suggest that he write to the Chief Inspector, Departmental Claims Branch, the Hydro, Llandudno, Caernarvonshire, stating the facts, and asking for the Dominion income tax relief due to him for the past years.

Depreciation Allowance

G. W. asks: "What depreciation allowance can be claimed for a car used for professional purposes?"

*** The normal allowance for the current financial year will be 25% (i.e., 20% plus an additional one-fourth), calculated on the written-down value of the car in use at the end of the year (prior to April 5, 1946) to which the professional account has been made up.

Forces Pay—Dominion National

L. W. completes his 56 days' demobilization leave in June, 1946. He has already returned to South Africa and, presumably, has retained no residential rights in this country. What United Kingdom tax is deductible from his U.K. pay for 1946–7?

*** Pay issued from United Kingdom sources is taxable irrespective of the residence of the recipient. The tax for 1946–7, therefore, will be calculated on the basis that a full year's personal allowance is deductible from the amount of income liable to assessment. As the "office or employment" has terminated the pay can be reckoned on the 1946–7 amount.

LETTERS, NOTES, ETC.

Treatment for Sprue

Dr. H. C. SAKSENA (Preston, Lancs) writes: I should be interested to hear about any cases of sprue which have not responded to usual treatment (resistant cases) and in which the condition is getting worse. I have been trying a new method of treatment which has given extremely satisfactory results, but I haven't had enough cases yet to publish the results and method of treatment.

Preventing Orchitis in Mumps

Dr. Y. G. SOFER (Edgware) writes: Can any prophylactic measures be taken at the onset of mumps to prevent orchitis? (April 27, p. 670). May I refer to the investigation done by McGuinness, Aims, and Peters Michael (*Amer. J. med. Sci.*, 1945, **210**, 661) where 20 ml. of gamma-globulin prepared from mumps convalescent serum one to three months after recovery from mumps was given intramuscularly to patients with mumps whose glandular swelling had been present for twenty-four hours. Patients who complained of testicular ache at the time of admission were excluded. The results were as follows:

		No. of Patients who Developed Orchitis	
No. of injected patients	51	4	7.8%
No. of controls	51	14	27.8%

Gamma-globulin from normal human plasma employed in a similar investigation was found to be ineffective.

Precaution when Using Throat Packs

Dr. H. PARRY-PRICE writes: Deaths have been recorded due to the removal of tracheal tubes after tonsillectomy and failure at the same time to remove the throat pack. I have recently instituted what I hope may prove a more or less fool-proof routine to avoid such accidents. All throat packs are soaked in vaseline and kept in a separate tin on the anaesthetic trolley. Thus no packs can possibly be involved in the sister's swab count at the end of the operation. The lid of the throat pack tin is painted red, and across it in white letters THROAT PACK TIN. Directly the tin is opened the lid is hung up on the trolley in a prominent position so that all may see it. It is not replaced until the pack is removed from the throat.

Princess Tsahai Hospital Appointments

Miss E. SYLVIA PANKHURST writes from 3, Charteris Road, Woodford, Essex: Some time ago you were good enough to publish a request that members of the medical profession who might be willing to take up appointments in the Princess Tsahai Memorial Hospital would communicate with the honorary secretary of the Hospital Council. The Council, however, was not able to proceed with the making of appointments, as had been anticipated, at the time, because, on further consideration, it was decided to revise and enlarge the original scheme, and this delayed the whole project. The generous assistance of the eminent hospital architect, Mr. Lionel Pearson, F.R.I.B.A., was obtained in revising the scheme. Mr. Pearson drew a new set of plans, modifying and enlarging the original partly completed structure, which has been presented to the Council by H.I.M. the Emperor of Ethiopia, and adding new blocks for a big out-patient department and an ample operation theatre, kitchen, etc. The building is now in progress on the revised plans under a contract to be completed on Aug. 25 next. It is hoped that the interior equipment, which is being purchased in this country, may be fitted during the autumn. The Council, therefore, desires to make arrangements well in advance for the staff, and invites applications for the resident posts of physician, surgeon, obstetrician, radiologist, anaesthetist, and other specialists.

The Tuberculous Patient

"A. E." writes: As a doctor's wife now undergoing treatment for tuberculosis, I ask leave to make a few general observations in your columns. I often wonder if the attitude to tuberculosis which I have encountered is the usual one. A fairly common statement (by medical and nursing personnel) is that complaints about the food by sanatorium patients are a symptom of the disease. I am aware that fussiness about food is apt to develop in anyone who is confined to bed, and that in the tuberculous patient this tendency is aggravated by (*a*) the duration of the illness, and (*b*) the patient's awareness that an exceptionally nourishing diet is an essential part of his treatment. I would suggest that the sanatorium physician who neglects to investigate thoroughly all complaints about the food may be saddling his patient with the extra burden of frustration. Perhaps the most saddening aspect of the thing is that the vast majority of patients dare not press their complaints, being completely in the hands of the authorities, and knowing that in the event of their being expelled from their city, or county, sanatorium while still "open" case they run the risk of infecting their relatives. One would imagine that the physician, aware of his omnipotence in this matter, and being possessed of a conscience, would be specially punctilious in the appreciation of his exceptional power. I must also add that it sometimes seems to me that while we still await the State Medical Service itself, some of its alleged "attendant evils" are with us already and have been with us for many a long day. Tuberculosis, after all, is not a "rare" disease in this country, but it is fairly obvious that its victims are denied freedom of speech in many quarters—I speak from personal experience, and from the hearsay evidence of many responsible people.

Perhaps the present era of shortage of nursing and domestic staff is not the moment to broach this other point—but it is at least worth bearing in mind for the future. I refer to the unwillingness of nurses to give more than the bare minimum of attention to their patients. Many of these girls are untrained, certainly, but I fear there is often official backing for their ungraciousness. Instances of apparently meaningless, and certainly exasperating, petty restrictions could be cited. Perhaps I have been unfortunate in my past experiences, and I am glad to put on record that in my present place of treatment I have been given every consideration, and have found conditions—especially in view of the food shortage and other handicaps—wellnigh perfect.

The chances of survival of the tuberculous patient (thanks to the improved methods of local treatment, and their efficient application) are growing daily greater. I make the plea that he be not returned to the outside world healed in body but embittered in spirit, and that his recovery be not retarded by an unsympathetic environment. Although my own illness has now lasted for eighteen months, I have never been acutely ill, and have good grounds for believing that within eight to ten months I may once more be able to lead a normal life. Therefore I speak in a spirit of constructive criticism, rather than one of bitterness and frustration.

DISTRIBUTION OF PENICILLIN

On June 1 the present free issue of penicillin by the Ministry of Supply through the hospital system will cease. From that date penicillin will be available to hospitals, to the medical and dental professions, and to retail pharmacists through trade channels. Supplies should be obtained from the usual suppliers of such products. Penicillin or any preparation containing it may be supplied to the public only against the prescription of a registered medical or dental practitioner.

Initially most of the penicillin will be in the form of dried powder packed in phials or ampoules containing 0.1, 0.2, 0.5, 1.0 mega unit. The maximum retail prices of these packs will be 2s. 9d., 4s. 9d., 10s. 6d., and 20s. respectively. Penicillin will also be available in an oil-wax suspension for injection. Pharmacists may use dried penicillin in dispensing the prescriptions of medical and dental practitioners. As time goes on increasing quantities of penicillin preparations will become available from the manufacturers.

Should any difficulty be experienced in obtaining supplies, advice may be sought from the Ministry of Supply, Penicillin Production Control, Tothill Street, London, S.W.1. (Telephone No. 7788, Ext. 403.)